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PHYSIOTHERAPY: ITS USE BY THE GENERAL PRACTITIONER*

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I BELIEVE that I am to present to you today a subject which is of the utmost importance and value when rightly interpreted and used, but its application in the hands of the untrained and unwary may lead to serious errors.

Your President has set rather a difficult task before me, in asking me to give you rules and directions in regard to a subject which should be one of the fundamentals of the surgical art, and with which you should all be familiar. I have accepted, however, with the hope that there might be certain procedures and methods which I could possibly make clearer to you.

What is Physiotherapy?

Physiotherapy is intended to supplement the work of the surgeon, the treatment of the medical man or internist, and the splints of the orthopedic surgeon.

This broad field of Physiotherapy today includes electrical modalities, hydro-therapeutics, radiant light and heat, massage, active and passive motion and muscle re-education following fractures and paralytic conditions.

In other words, Physiotherapy is medical mechanics, which in many cases degenerates into mechanical medicine.

I shall limit myself today to the consideration of only a few of the above subjects: namely, radiant light and heat, massage, active and passive motion and muscle re-education.

RADIANT LIGHT AND HEAT

The use of the so-called "Baker," the usual types of which you are familiar with, is based on the combined action of light, heat and chemical rays. With the exception of the quartz light, they are harmless and therapeutically weak, but may cause burns if used carelessly. Their use causes dilatation of the capillaries, perspiration and increased local metabolic changes, even in the deep tissues, as a result of the changes in the capillary beds. Radiant heat should always be used as a preliminary to massage, in order to relax the part and bring more blood to it. In other words, a physiologic congestion of the part is created. Heat should not be applied to a part or a joint unless it is followed by massage before any active exercise is undertaken.—Active exercise in the presence of physiologic congestion is as bad for the part as when following a traumatic or pathological congestion. Heat should be applied for at least twenty minutes to half an hour to get its full effect.

Now, what is meant by Massage?

Almost one hunderd years ago, an ancestor of mine, Dr. James Thatcher of Plymouth, a Revolutionary surgeon of note, wrote "that friction or massage was too much neglected, and yet it was in the power of everyone." He stated that "friction is a kind of an exercise that remarkably contributes to the health of sedentary persons; it excites and kindles the natural warmth; promotes perspiration, strengthens the fibres and tends to dissipate stagnant humors."

To go further back historically, massage is described in the Odyssey as practised by the women who rubbed and kneaded the returning battle heroes. The father of medicine, Hippocrates, described and advocated the use of manipulation, especially in cases of stiff joints. In India, China, Greece, Rome, Egypt and Turkey, massage was part of the daily routine following bathing, but was not used altogether in a strictly medical sense or wholly as a therapeutic measure.

Its therapeutic use was revised in Europe in the sixteenth century by Hieronymus Fabricius, who applied it to stiff joints, and similar conditions. From that time to the present one its use has gradually increased as a therapeutic agent, being greatly helped in its adoption by Metzger of Amsterdam, who began to use and apply it intelligently and methodically in 1853.

Massage does not mean stroking the part or skin lightly, as one often sees it done by the so-called masseuses, but means the application of rubbing, kneading, pinching and tapping forces anatomically and intelligently applied. Given in such a way the flow of blood to the part is stimulated, the circulation of lymph is necessarily increased, the adhesions are softened, and there is a general increase in the muscle tone and strength.

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Following massage, as before noted, manipulations, passive and active, are better and more easily carried out. General massage, on account of its tonic effect, has been called the "lazy man's exercise."

PHYSIOLOGY OF MASSAGE[1]

The Physiology of massage is closely related to the Physiology of muscular exercise in general. It has been observed that active exercises induce an increase in the lactic acid concentration in the muscle tissue, which is sufficient to reduce the arterial carbon dioxide tension, and the reaction of both arterial and venous blood becomes less alkaline.

Passive exercise or massage on the other hand is not accompanied by the evidence of lactic acid production, and acidosis, which accompanies relatively mild active exercise, nor does it cause evidence of loss of acid and alkalines which follows exposure of the body to external heat[2].

The benefits of massage are probably due to changes in the circulation, especially those of the capillary bed.

The production of lactic acid by muscle depends chiefly or entirely on active contraction of the muscle itself as induced by the usual nerve stimulus and cannot be brought about by extraneous mechanical stimuli of therapeutic degree. If massage produced additional amounts of lactic acid, the benefits to over-exercised muscle would be difficult to explain. Experience, however, has shown that massage in the form of a vigorous rub down has a definite value. Lacking any further addition of lactic acid the changes then induced in the local blood supply permit a more rapid removal of that present.

Massage, therefore, improves circulation and so hastens absorption of waste products, exudates, scar tissue, etc., and prevents stiffness and pain.

There are five definite and well recognized kinds or methods of applying massage known as follows;

1. Effleurage, or stroking, forms the beginning and end of every treatment, and is inserted between all other manipulations. It is soothing and also affects blood flow. It should be rhythmical—light pressure at the beginning and end of stroke and heavier in the middle.
2. Petrissage, or kneading,—deep massage for muscles.
3. Friction, a firm deep circular movement, for use about joints to break up adhesions and on scar tissue.
4. Tapotement, or tapping; striking or percussion method. It stimulates nerves, blood vessels and muscle contractions.
5. Vibration, which is done with finger tips or the palm of the hand, for msucle atrophy. It is done better with a mechanical vibrator.

Conditions in which massage is contra-indicated.

1. Fever—tuberculosis—or any active infection where there is danger of organism being distributed in blood stream.
2. Skin disease.
3. Heart disease—except under doctor's regulation.
4. Acute joint conditions—trauma or arthritis.

MUSCLE TRAINING

By muscle training we mean the localized action of certain definite muscles or muscle groups —the attempt to exercise and develop certain muscles, without at the the same time bringing into play other muscles, whose action for some reason is undesirable.

Muscle training is especially useful in the treatment of infantile paralysis. A few years ago, patients with weakened leg muscles were encouraged to be as active as possible, on the theory that exercise strengthens muscles. Exercises were given to bring up the strength of the weakened leg, without much thought as to what particular muscles were performing the exercise, or just how much weakness existed in individual muscles. The facts that over-fatigue is weakening to weakened muscles and that a patient always tends to perform a movement by using strong muscles rather than weakened ones were not taken into consideration.

Study of the cases following the 1914 epidemic in Vermont brought out the fact that weight-bearing and fatigue are harmful, and the need for systematizing the examination of weakened muscles and analyzing the exercises given for their treatment.

Each muscle is made up of many muscle fibers. Action of contraction of muscle makes individual fibers shorter and thicker, and causes a chemical action with resulting waste products. These are normally removed by circulation and fresh blood brought to the part, accomplished by mechanical pumping action of muscle fibers and joints on the blood vessels. If the circulation is not good there is an accumulation of fatigue products, which results in loss of muscle power; therefore, exercises should be given in rhythm sufficiently slow, and time enough allowed between counts, for the recovery of each muscle. The full arc of motion should be completed each time, so as to get the full mechanical effect of the joint action on the circulation.

The full arc of motion is also desirable in order to establish the habit reflex, and obtain better coördination of nerve centers through frequent repetition of normal movement. Passive movement is useless in restoring muscle power. Voluntary movement must be attempted.

Muscle power can perform more work when contraction is started from the stretched position, than when the muscle is already partially contracted when movement is started. They develop best when given all the work they can do, without fatigue. which weakens.

GENERAL PURPOSES OF MUSCLE TRAINING

1. To maintain and improve circulation and nutrition.
2. To maintain muscle tone and prevent degeneration and atrophy of muscle fibers from disuse, or from joint adhesions, in cases where motor nerve supply is partially or temporarily interrupted.
3. To strengthen muscles weakened by disuse or injury, whose nerve supply is unimpaired.
4. To coördinate the remaining nerve centers where partial destruction of the centers controlling a part has taken place—re-education by habit—while at the same time developing the fibers of that muscle which are still functioning normally, thus increasing the strength of the whole muscle.

The foundation of muscle training is an exact knowledge of muscle anatomy, origins, insertions and actions. This is necessary in order to determine what muscles are weakened, how they may be strengthened, and what muscles may be trained to take their place.

First, preliminary to muscle training, an examination is made to determine the exact amount of power existing in the different groups. This knowledge is necessary in obtaining response and action from very weak muscles.

There are six standard classifications for grades of power—normal, good, fair, poor, trace and gone.

After examination intelligent decision of which muscle groups are to be strengthened is determined by

(a) Presence of deformity, or permanent contracture of muscles. Obviously, it is unwise to strengthen muscles causing deformity, or already contracted.

(b) Likelihood of causing deformity. In the presence of unequal balance of power about a joint it is unwise to strengthen a muscle which already overbalances its opponent if likely to cause deformity.

(c) Relative importance of weakened muscles as to—useful function of limb—walking—correction of limp—etc., bearing in mind the danger of fatigue from too many exercises.

After determining what muscles are to be developed, knowledge of the type of exercises best suited to the muscle in regard to its amount of power remaining is essential.

Now—a word about who should give the massage!

Good massage, properly applied means, first of all, adequate training and proper anatomical knowledge. In Germany these two requisites go together. According to McKenzie, the recognition of massage as a therapeutic agent has been delayed by the failure to distinguish between true massage and unskilled rubbing, that merely requires muscular strength, a certain manual dexterity and good will. In this country, physicians as a class know practically nothing about massage as such, principally from want of training. Generally speaking, a person properly trained in physical therapeutics and massage can give a better treatment, and get better results with less waste of time than can physicians, even with their better anatomical knowledge. This is because the latter lack the practical technique and experience which long practice and training afford. However, no massage should be given to any case following an injury or fracture, unless under the supervision and direction of the physician, and then only in such doses and at such intervals as he prescribes. Manipulations of joints or parts following fractures or injuries should never be undertaken without express directions from the physician, as considerable harm might result.

Theoretically, it is better for the physician to give the massage, for he knows what he wants to do and accomplish. Practically, he can probably get far better results, if he leaves the technical efforts to one of greater practical experience and adequate knowledge.

MANIPULATION

Manipulation has gone hand in hand in the past with massage. Under the general heading of manipulation come forcible passive motion and active motion. Now, passive motion is very different from massage, and its effects are also apt to be very different. In the past, it has been overdone, and its use, I believe, is today becoming more and more restricted. This is true especially in cases of joint strain and injury, and in inflamed joints generally. Forcible passive motion which causes pain, never does any good in these cases and generally does harm. It is a good rule to follow, that when forcible passive motion causes pain—*don't do it*. The continued use of forcible passive motion in the presence of a painful and irritable joint, following a sprain, fracture, or injury, leads only to an increase in the symptoms, an irritable and generally enlarged callous and a persistence of the symptoms. What such a part needs, is rest and possibly fixation, even from slight active motion, and a cessation from such over treatment. The only exceptions to this statement in regard to passive motion, are in cases of contraction following Volkmann's Ischaemic Paralysis, Obstetrical Paralysis and Infantile Paralysis.

The bad effects of forcible passive motion are best seen as a rule in cases of elbow fractures, especially in children. Unless one is careful, it will be found that forcible passive motions are started too early, when they cause pain, with the avowed purpose of breaking up adhesions and extending the range of motion. Its use almost invariably leads to less active or voluntary motion, as a result of increased irritability in and about the joint. Very gentle passive motion, limited to a very few degrees of motion, can be used when changing splints or bandages, and will probably do good instead of harm. It must be used with the greatest caution, however.

A case in point is as follows:

Several years ago, I operated on a boy at a hospital in a neighboring city for a fracture of the external condyle, which had become displaced. Six weeks following the operation, without my knowledge, forcible passive motion was started and continued daily. The arm was kept meanwhile in a sling. Instead of a steady increase in the range of joint motion with less pain and sensitiveness, which was what was expected, there was an increase in all the local symptoms and the child had a tender, irritable, swollen and inflamed joint with no motion, where at first there had been a moderate amount. At this point, baking was started with enforced rest and absolutely no motion. Later, when the symptoms had subsided, such active motion was allowed as the boy cared to give the joint, and eventually he obtained a normal elbow. I firmly believe that a persistence in the first method of treatment would have resulted in a considerable permanent loss of motion in the elbow joint. Allowing the patient in these elbow cases to work their own joints by such active motion, undertaken early and with careful supervision, as they care to give them, is best, and although it may seem to be an inactive method, is adequate and generally best in the end. I have followed the same course in elbow cases since, with no reason to change. It is hard to pursuade men not to use forcible passive motion. They think that by using it they are going to hasten recovery and increase mobility. This they fail to do and the best advice is to put the arm in a sling until the symptoms are quieted down and then let active motion work the stiffness out, helped, of course, by massage and baking. Active motion up to the point of pain causes no reaction in the joint, but gradually restores good function. Forcible passive motion gradually lessens joint motions through increased inflammation and periosteal overgrowth. As a general rule forcible passive motion should be abandoned in the treatment of joint disease. This applies also to the use of this method under an anaesthetic for the purpose of breaking up adhesions.

As an instance of the non-success of forcible passive motion carried to an extreme, the following case may be of interest and value in teaching a lesson.

Some time ago, I saw in a hospital in a nearby city, a middle-aged lady who had both knees affected by an arthritis. One knee showed some motion; the other was practically stiff and held in about sixty degrees flexion. She was admitted to the wards and plaster casts were applied with her legs in the position of deformity. These casts were then cut across behind the knees in such a way that wedges of wood could be inserted as often as need be to straighten the legs. This method worked fairly well, but caused considerable pain and although her legs became much straighter, left an incomplete result, and after going home she made matters worse by taking off her casts.

She was later readmitted at her own urgent requests, for something more radical, for she stated her legs were not useful in their bent and painful condition. Under ether, therefore, the hamstrings were divided on the leg which offered the greatest resistance to correction; but as the other came down easily, it was not deemed necessary to cut the hamstrings on that one. Plaster casts were then applied on both legs from the toes to the groin. Five days after the operation the foot on the leg which had been merely stretched, became blue and cold and remained so even after splitting the cast. The cast was then removed without relief. The foot soon become gangrenous and an amputation was later done, at the junction of the middle and the upper third of the lower leg. Examination showed an organized thrombus in the arteries, probably secondary to pressure on the popliteal artery by the tension of the taut hamstrings and posterior joint capsule. If these hamstrings had been divided she would in all probability have had no more trouble with this leg than she had with the other. The other leg, which presented a much more marked contraction, eventually became useful. This case afforded me a most striking lesson of the bad effect of forcible passive manipulation carried to an excess.

Another case of recent experience is as follows:

A young woman came to me with the following story: Last summer she fell in a camp and hurt her wrist. She was told she had sprained it and was directed to use it freely. This she tried to do, but instead of its getting better, it got worse and became swollen and tender. After about four months I saw her and took an X-ray which showed a fracture of the scaphoid bone into two separate parts. There was practically no callous, but considerable soft part swelling, induration, and practically no joint motion at the wrist. This condition was clearly the result of overuse. Following splinting, baking, and gentle massage, and later by slight and gentle active use, she finally obtained a normal wrist, with complete union of the two bone fragments as shown by the X-ray. Now, if she had had fixation at first for a week or so, followed by gentle active use or massage, she would have avoided all this later unpleasant train of events.

There is another condition seen following disease and injuries of the joints and fractures, which is of the greatest importance, namely, muscle atrophy. This muscle atrophy is often great in extent and severity, and while seldom recognized in certain cases as a definite factor, may often lead to greater disability than the original condition which caused its appearance. It generally persists for some time after the disease which caused its appearance is cured, and may be permanent.

It is usually common following knee injuries, such as acute synovitis, after fixation of the knee in a splint or cast for any length of time. You are all familiar with the appearance of a leg or arm, following the removal of a plaster cast or splint, which shows on inspection and palpation much muscle wasting.

This condition is best prevented by being careful not to fix a part too long in a splint or cast if possible, for as soon as pain and sensitiveness are gone following a synovitis, fixation is no longer needed, even if fluid is present.

The best treatment of synovitis of the knee joint is simple and is as follows:

There are definite indications to meet in every case. These are at first to fix the joint, to prevent weight bearing, to diminish the pain and tension in the joint, by getting rid of the excess synovial fluid, and to restore function within a reasonable time without too great loss of power from muscle atrophy in the leg. Now there are certain definite ways of accomplishing all this.

First, apply a ham splint, or a plaster cast from the ankle to the groin split down each side, and have the patient go to bed or keep the leg in a horizontal position. Secondly, if there is pain, apply an ice bag over the knee; fasten this on by a many-tailed bandage and keep it in position for at least forty-eight hours, when it will be found that the pain has gone and the swelling generally much diminished, meanwhile protecting the skin with a piece of flannel.

After the first few days, let the patient get about with crutches without much weight bearing, and start baking by electric light, and the use of gentle massage. The massage should never be used directly over the knee joint, but should be applied to the muscles of the thigh and calf. If the swelling goes down well and the pain stops, do not start passive motion, but take the splint off by the end of the first week, bandage the knee with a flannel bandage, with a felt horseshoe pad about the patella to keep the direct pressure off it, and allow weight bearing, with what use in flexion the patient cares to give the joint. In this way you can get your patient well more quickly than usual, have a better joint, and a more useful leg than under the old regime, where the splint or cast was put on and left for at least three weeks, at the end of which time the joint, although it might have no fluid in it, was absolutely motionless and stiff, and several weeks more were spent in recovering lost motion and regaining muscle strength. This last statement is not an exaggeration but the result of painful personal experience. Intelligent use of the joint, even if it has a little fluid in it, does it far more good than all the fixation in the world, and makes for a better and quicker convalescence. Remember that disuse alone will cause muscle atrophy.

In a fracture, as soon as a callous is formed, sufficient to hold the bones in place, a great degree of fixation is unnecessary. Then baking, massage, and very slight active motions should be started. This is especially true in cases of Colles' fracture, where more harm and permanent disability follows too long fixation than early and intelligent massage, baking, and active use. By these methods, intelligently carried out much better results can be obtained than has been true of the past.

Muscle atrophy as a result of long continued abuse of a part which causes over used and tired muscles to stretch, by keeping them under constant strain, is a cause of certain types of disability. These conditions lead to muscle atrophy degeneration, and loss of tone.

The following case is one of interest, as illustrating this condition:

A young lady, a cello player, was sent to me by her family physician on account of increasingly frequent dislocation of her left shoulder joint. The dislocations became so frequent that she had to stop playing the cello, on which work she depended. It seemed at first as though an operation for "reefing" of the shoulder capsule might be necessary, but after consideration she was started on carefully guarded active exercises with dumbells and chest weights, besides baking and massage to the shoulder. Motions were avoided which had a tendency to dislocate the joint. Under this regime she steadily improved. The dislocations became less frequent, and as time went on she was allowed to practise her cello for a few minutes at a time. Subsequently, that is in about six months, she made a complete recovery and has gone back to full use of her arm, and has suffered no further trouble. She developed shoulder muscles of sufficient strength to hold her humerus in place and allow the capsule of the joint to contract. It seems that the position in which she held her arm threw all the force of the leverage on the shoulder joint in such a way as to make the head of the humerus the end of the long lever with the fulcrum either at the wrist or elbow. Relaxed shoulder muscles from over use; lack of original development, together with the forcible contraction of arm muscles, were sufficient to start a chain of dislocations which made a cripple of her and threatened her future. Recognition of this problem of muscle atrophy sufficed to establish a cure, probably better and quicker than an operation would have done and without the surgical risk.

Again to show the effects of massage and early active motion with a short period of fixation following a fracture, let me cite the following case:

A physician sustained a fractured wrist, a typical Colles', by a back fire of his motor. He was seen at once, and splints were applied. There were kept on six days, the fingers having been left free. At the end of this period, the dressing was removed and baking and massage were started and continued daily. Support was furnished by a short posterior splint and a bandage. Such active motion as the patient cared to do was encouraged. At the end of twelve days from the date of fracture he was able to attend a confinement and deliver a child with forceps. In less than three weeks, he had a normal wrist, not stiff, tender, or painful.

Massage of the arm and wrist and active motion of the fingers should be begun early, as soon as the end of the first week in Colles' fractures. Never start forcible passive motion of the wrist joint at any time.

In fractures of and about the ankle joint, one of the most frequent complications we have to deal with is contraction of the tendo Achilles. This is a result of the foot being put up in too extended a position. It is better to divide this tendon rather than to try to stretch it too forcibly, which latter procedure virtually results in more or less trauma to the joint. The stiffness and adhesions seen about the ankle following fractures are generally due to the swelling and infiltration of the parts following the injury, and their severity and degree usually are in proportion to the severity of the injury and length of fixation. Early massage and gentle active motion will lessen their extent, and result in a better joint with a shorter convalescence. Fixation seems to be the direct cause rather than disuse and its prevention is therefore indicated. Atrophy of muscle from too long fixation, probably results in more or less muscle shortening, which may be permanent, and early treatment is essential to prevent this.

Plaster casts and splints should be worn until the union is firm, that is in leg fractures, three or four weeks. If possible, during this period, let the patient have the benefit of baking, gentle massage and active motion, by taking off the front of the cast only. Remember that forcible passive motion should always be avoided as likely to do harm. Repose is harmful for both joint and muscles, in that it makes the joint stiff and the muscles weak. Remember that the extensor muscles degenerate faster than the flexors, and pay especial attention to the deltoid and rectus femoris, for the arm and leg cannot be used well if these extensors are weak and atrophied. When any part is immobilized, be sure that parts are placed in proper relation and, in the leg, have due regard to subsequent weight bearing. In the hand and wrist, leave the fingers out if possible so that they can be actively used, and do not neglect early massage, nor too long fixation.

Now, Gentlemen, I have said enough to give you an idea of the essentials of the early use of physiotherapy, as exemplified by massage and active motion, following injuries. It is also to be hoped that I have made myself clear in regard to the dangers of forcible passive motion. Muscle atrophy must be combated for it is a real danger. Contractions must be minimized and all these specific conditions can be met only by the methods I have advocated, without the use of which I venture to say results will be disappointing and convalescence long.

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REMARKS OF THE HONORARY CHAIRMAN OF THE CLINICAL SECTION OF THE NATIONAL TUBERCULOSIS ASSOCIATION AT WASHINGTON, D. C., OCTOBER 4, 1926

BY VINCENT Y. BOWDITCH, M.D.

Ladies and Gentlemen:

Having accepted the honor of an invitation from our Managing Director, Dr. Linsly Williams, to act as Honorary Chairman at the opening meeting of the Clinical Section, my necessarily very brief remarks will be chiefly reminiscent in character, which I trust will be acceptable at this meeting which follows so closely that of the International Conference of the past week.

As I stand here, the memory of the great International Tuberculosis Congress held in Washington in 1908, when I had the honor of presiding over the Clinical Section, comes vividly before me. The fact of the presence at that time of many men of eminence on both sides of the Atlantic would itself mark that meeting as epochal in character: Koch of Germany, Landouzy, Edward Rist, Letulle of France, Philip of Scotland, Arthur Newsholme, Simms Woodhead, Theodore Williams of England, Tenderloo of Holland, Maragliano of Italy, are only a few of the names that gave distinction to that memorable meeting, and it is with pleasure that we greet a few of them again, deeply regretting at the same time, the absence of those who were with us then.

With equal pleasure and enthusiasm do I recall an event of earlier date and of great moment as it has since proved, when in 1904 a comparatively small group of medical men and laymen deeply interested in tuberculosis work assembled at a Public Health meeting in Baltimore at the wise suggestion of Dr. S. A. Knopf of New York, and took steps which resulted at a later date in the formation of this Association, destined to become in later years a great factor in combatting the ravages of a disease which at that time took the lead in the mortality lists of the civilized world. Naturally among that group of well-known workers in the anti-tuberculosis movement the names of William Osler and William Welch stand preëminent. The former, on the eve of his departure from America to take his position as Regius Professor at Oxford, with characteristic energy and enthusiasm endorsed the plan suggested by Dr. Knopf. The Association was subsequently formed and, with fitting and unanimous action, Dr. Edward L. Trudeau, the great pioneer of anti-tuberculosis work in America, was elected President for the ensuing year.

Again the picture arises of the first annual meeting of the Association in Washington in May, 1905, when the atmosphere in the assembly hall of the New Willard Hotel seemed to be charged with the spirit of a new and great endeavor while the great audience, fully prepared to give him a richly deserved ovation, awaited the arrival of the President, Dr. Trudeau, and then, upon his entrance, rose en masse and applauded him to the echo—an occasion not to be forgotten by those present.

Although previous to the organization of our Association, it had been shown that tuberculosis was no longer the hopeless disease it was believed to be in earlier times, and although sanatoria had begun to spring up throughout the country for the treatment and cure of the disease before the formation of this Association, yet the amazing increase during recent years of methods not only for curing but for the prevention of tuberculosis can justly be attributed in large part to the heroic work of the National Association, whose efforts have influenced not only the medical profession but to an even greater degree the laity, ever ready to learn the best methods of overcoming a disease which has burdened the civilized world. The marked decrease in the death rate from this disease during the past decade by which tuberculosis no longer leads the mortality list, but now takes the fourth or even fifth place, gives us courage to continue the good work with undiminished energy.

While unable to share what seemed to me the too optimistic view of some of my confreres in the early history of this Association—viz.—that in fifteen years by strenuous effort tuberculosis could be placed in the class of preventable diseases, like smallpox and others—I have nevertheless believed that we were marching in the right direction, always with the hope that some definite panacea not only for the cure but for the prevention of tuberculosis may be discovered, but that in the meantime unremitting effort must be made to bring about that happy result.

Already the establishment of sanatoria for hopeful cases, hospitals for the advanced cases, dispensaries, home treatment, social service work, which naturally involved instruction of the ignorant, and other methods have accomplished much. What more can be done at the present time to supplement the work already done? In my opinion, two methods still need a much greater development; first, the further establishment of sanatoria or so-called preventoria for children, where the recent methods of helio-therapy can be properly applied not only for the active cases but for those who have been exposed to tuberculosis, and an increase in the number of open-air schools, both public and private, already proven to have immensely beneficial effects; and second, and of vital importance, the wide-spread establishment of industrial colonies for the benefit of tuberculous patients who still need supervision but are capable of earning money in suitable occupations. A markedly successful example of this has long been in operation in England, well known to many: The Papworth Colony near Cambridge under Dr. Varrier Jones, where patients are able to live with their families in a model village in which remunerative occupations are carried on under the best hygienic conditions.

Two similar institutions, but still in their infancy, exist now in the United States; the Central New England Sanatorium and Industrial Colony established at Rutland, Mass., under the care of Dr. Bayard T. Crane, and one recently opened at Livingston, N. Y. (the Potts Memorial Industrial Colony) under the care of Dr. Pattison: both institutions destined, if properly supported by the public, to be of incalculable benefit to the patients and their friends and also an economic asset to the country. At present, as said by one of our eminent anti-tuberculosis workers and writers, Dr. Allen K. Krause, the lack of such establishments marks a great gap in our present methods of meeting the tuberculosis question, and every effort must be made to fill this gap, thus lessening the danger of relapse which not infrequently happens when patients are compelled to return to unhygienic surroundings in their homes or places of employment; at the same time offering suitable means of support to those who may be more or less permanently disabled and unable to return to their former occupations.

I am impelled in closing this necessarily brief introduction to our meeting to touch upon one subject which has moved me deeply for years, and which has never seemed more important than at the present time. In the middle of July, 1914, I had the privilege of being at the meeting of the British Public Health Association in Edinburgh. Following a large banquet given at that time at which I was called upon to speak, I alluded to a fact which deeply impressed me at the time, viz., that Great Britain and the United States had just finished one hundred years of peace with each other. I spoke of my firm belief that meetings of that nature among science-loving men and women of different nationalities had had an incalculable force in keeping the nations together because of better understanding arising from such close relationship. I spoke with perfect sincerity when I said that it was my fervent hope that such influences would gradually extend to all the nations of the earth; and my remarks were received evidently with cordial favor. Two weeks from that night, like a thunderbolt from a clear sky, Germany had sprung at the throat of France and the world was on fire. I can never forget the sense of pathos that came over me as I recalled the words I had uttered and of the hollow mockery, as it seemed to me at the time, of what I had said with faith and earnest hope for the future. That feeling came from the horror of the cataclysm which had burst upon the world, and, I rejoice to say, was only transient; for the belief uttered at that time grew again and has strengthened as time has passed in spite of disappointments and discouragements. Let us ever keep in mind the teachings of the great and noble Pasteur that Science should bind nations together. Let us not forget his agony of mind when in 1871 his beloved France and Prussia were engaged in a death struggle, shattering his ardent desire that they should be sister nations. I believe more than ever that meetings such as that of the past week, at which we have welcomed delegates from many other countries, have an immense influence in promoting that spirit of "peace on earth and goodwill among men" so devoutly to be wished for. In accordance with that spirit, I know that I express the desire of every member of this Association when I extend to each and all of our foreign associates a most hearty and cordial welcome today.

THE FUNDAMENTALS IN TUBERCULOSIS WORK AS UNDERSTOOD BY VOLUNTEER ORGANIZATIONS*

BY FRANK KIERNAN

YOUR Secretary in assigning to me the subject of "The Fundamentals in Tuberculosis Work as Understood by Volunteer Organizations" hit upon a theme that I think should be restated fairly often. The work of the volunteer organizations in tuberculosis, as you know, is no inconsiderable one as will be understood from the fact that in the Christmas Seal Sale of 1925, under the leadership of the National Tuberculosis Association, there was raised in this country ~~the~~ sum of $4,900,000 by the volunteer organizations for carrying on their work in 1926. This vast sum of money is designed to be spent in the prevention of tuberculosis and the extent to which it is directly applied to prevention is the extent to which the volunteer workers are carrying out the purposes for which the National, State and Local Organizations were brought into being. What I am going to say briefly on this subject today represents only my own personal view, but that view is based upon eleven years' experience in the volunteer side of tuberculosis work and is, I think I can say with assurance, the widely held view of many working in this same field.

To get the whole picture we must go back to the deliberations of the International Tuberculosis Conference in Washington in 1908 resulting in the following major decisions:—

1. To make a systematic endeavor to locate, so far as possible, all the cases.
2. To provide hospitals and sanatoria for as many cases as possible.
3. To establish clinics or dispensaries for early diagnosis where such was not readily obtainable from private physicians.
4. To send out visiting tuberculosis nurses to instruct patients and their families in the homes and to secure, wherever possible, hospitalization of patients.
5. To carry on an intensive, organized educational program to the end that the public at large in each of the several countries participating in the International Conference might be brought into an active participation, both in the campaign itself and in the business of controlling and preventing the disease.

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*Delivered at the annual meeting of the Norfolk County Public Health Association, June 2, 1926.

The eighteen years that have gone by have fully justified each of these decisions. The only change, so far as I am aware, in the program has been its enlargement by the addition of such ancillary institutions as the preventorium, the health camp, the follow-up of discharged patients, the attempt at nutrition work, the introduction of occupational therapy in the hospitals and sanatoria, and the introduction of more scientific methods of health education among children. Of course it should be said also that there has been a marked development in the technique of treatment and much work has been done and is now being done on the scientific or research side of tuberculosis work.

The things I have referred to above the volunteer worker understands to be the fundamentals and, for the most part, at least here in Massachusetts, these features of the campaign are in the hands of the official health authorities. That is, of course, as it should be and it is the ideal of the National Tuberculosis Association and its subordinate bodies to have ultimately all the tuberculosis work everywhere, so far as possible, turned over to the duly constituted public health authorities and have the volunteer associations retire from the field. Just when that time may come it is difficult to prophesy, but it is genuinely the ambition of the National Association and its subordinate bodies to bring this about. A very natural question arises here in view of the fact that most of the fundamentals in tuberculosis work in this Commonwealth are in the hands of official health agencies as to what useful things the volunteer organizations should be doing. That is a fair question and requires a frank and full answer.

In the first place, although the organized campaign on the official and volunteer side during the past eighteen years has been phenomenally successful, it is still quite amazing to find out the extent to which the prevention and treatment of tuberculosis is misunderstood by the people at large. There is probably no one in this place who does not frequently run across some otherwise intelligent person who is not only ignorant of the salient facts about the disease but entertains such erroneous notions as that it is hereditary, incurable, and can best be cared for in the Southwest. The volunteer associations have before them a very monumental task in carrying home to the people at large by any and every means they can command, first, the facts about the disease and its treatment, and, secondly, the importance of taking the very necessary steps to avoid it. This entails persistent and unremitting giving out of the information through newspaper publicity, the distribution of literature, the giving of simple talks on the fundamentals, the holding of exhibits, the exhibition of motion pictures, and reaching all strata of human society in ways that will intelligibly carry the simple message about tuberculosis and its prevention. That is task number one.

Task number two is to supplement the activities of the public authorities, whether state, county or town, in helping them carry out the programs they have set for themselves. To give you some examples of this I will cite the following instances: There has recently been a revision of the National Tuberculosis Association's booklet on "Diagnostic Standards in Tuberculosis." At the request of the State Commissioner of Public Health and of the Acting Director of the Division of Tuberculosis of the State Department of Health, our Massachusetts Tuberculosis League is distributing in this Commonwealth to physicians approximately 5,000 copies of this booklet which has been prepared by a committee of experts in the tuberculosis field, of which one is our own Dr. Henry D. Chadwick.

The second instance is in connection with the so-called Ten Year Program now being carried on by the State Department of Health among the school children of the Commonwealth. Valuable as is the information that is being secured through these clinics, the results would be almost negligible without an adequate follow-up. It has been found that with the multitudinous tasks of the school nurses and other local nurses in the communities visited, the follow-up of the children found to have hilum tuberculosis and suspicious signs is too great for these official workers, and the nurses of the affiliated organizations, wherever needed and wherever invited so to do, are rendering supplementary service in this important field.

The U. S. Census Bureau is authority for the statement that in Massachusetts in 1924, 3513 people died from tuberculosis. Using the conservative estimate of eight living cases to each death, there are probably not less than 25,000 persons suffering from tuberculosis in some form in the Commonwealth today. A further analysis of the deaths of 1924 shows that about 60% of those who died were between the ages of fifteen and forty-four, which is, of course, the most productive and important period of human life. Tuberculosis, although it has ceased to be the leading cause of death of all the age periods, remains the first cause of death in the most important stage of human life.

There is, therefore, left for the volunteer associations a considerable task to be done and it is presumable that it will take a considerable number of years to complete it.

In addition to the things that we are all agreed upon should be done and are being done in connection with this fight, I would add, by way of suggestion, something which, of course, we all know about, but which, I think, we all occasionally forget. It was suggested to me by reading the Annual Report of your Executive Secretary, Miss Gallagher. Miss Gallagher in her report says, "The part played by the home is to my mind the best means of coöperation for obtaining permanent results."

Wonderful as all these state and county sanatoria are and wonderful as the work of these nurses and other educational agencies is, it is my belief that the greatest results will flow from the home treatment in health habits and the prevention of disease. Indispensable is the work of the sanatoria, the hospitals, the clinics, the physicians, and the nurses, but the efforts of all these, in my opinion, are not to be compared with the preventive work that can be done by the parents and even by the children themselves if, as and when the fundamentals of health habits are actually carried out day by day in the routine of life.

To educate the public at large, adults and children, rich and poor, learned and ignorant, not only to give intellectual assent to these facts but to incorporate sound health habits into their daily lives, to my mind represents the major task of the volunteer associations and, I believe, is the corner stone of their work.

FOREIGN BODY COMPLICATIONS OF LYE STRICTURE OF THE ESOPHAGUS*

BY LYMAN RICHARDS, M.D.

A LYE stricture of the esophagus that has once reached the point of successful dilation with progressive and safe increase in the size of the lumen is unlikely to present further problems. In most instances larger and larger bougies, introduced either by mouth or through a gastrostomy wound are satisfactorily tolerated, and an eventual cure, even after protracted and often tedious dilatations, can be expected. Parents of children suffering from this unfortunate condition return from week to week reporting that the child is taking its assigned diet by mouth comfortably and without regurgitation or other symptoms, even when carrying a gastrostomy tube and a swallowed string.

Under such circumstances it is surprising and disappointing to be suddenly informed by the parents that, during a given period since the last treatment, the child has had a tendency to regurgitation, has complained of pain on swallowing, or has refused food usually taken readily. Such a report should at once lead to the suspicion that some untoward condition has arisen calling for investigation, though the first inclination is to assume that the symptoms are temporary and due to some general or functional disturbance, which requires merely a reduction in food or modification in diet. Nevertheless such a change in the picture may be the indication of a contingency which must always be borne in mind, namely, the presence of an unsuspected foreign body in the dilated portion of the esophagus proximal to the stricture. Continued dilatation, in the presence of this complication may lead to the most disastrous results and undo months or even years of painstaking treatment. Even the most careful observance and caution will not prevent some children from introducing almost any foreign substance into the mouth, and children with lye strictures are no exception. In their case the foreign body is the more likely to remain in the esophagus unrecognized, since any suspicious signs may so readily be attributd to their initial esophageal condition.

The following cases, the fortunate outcome of one of which was the result of pure chance, show well the necessity of heeding any untoward symptoms in such patients.

I. J. K.—age 4—had been treated for a lye stricture by Tucker retrograde bouginage and had progressed most satisfactorily under weekly treatment to the point of tolerating a No. 28 bougie. After months of symptomless dilatation his father reported that for the week previous he had been regurgitating food, had complained of a sore throat and in general had not seemed well. Examination of the throat showed a mild tonsillitis as the probable cause of this change. On attempted dilatation it was found that a No. 28 no longer passed easily though a No. 26 could be drawn up readily. The following week a No. 28 passed more freely and there was less complaint of dysphagia. It was considered that there had been only a temporary interruption in the progress of the case and nothing further was thought about it. Three weeks after the initial complaints a No. 28 bougie was drawn up through the esophagus quite easily and out through the mouth. Closely following the end of the bougie appeared at the child's lips a much blackened and corroded penny. No history of swallowing this could be elicited but the intruder undoubtedly was responsible for the previous upset, which should have suggested an x-ray at the time.

The bougie after previously passing with difficulty past the penny finally acted as a remover by dislodging the foreign body and bringing it up with it. It is plain that had this been other than a smooth round, flat object serious damage could have been done to the esophagus by any subsequent bouginage.

II. E. H.—age 2—after reaching a dilatation of No. 20 and taking all nourishment by mouth, was brought to the hospital with a history of inability, for the past four days, to swallow even water. During this period of dysphagia a small piece of hamburg steak, swallowed unbeknowst to the parents, and had been regurgitated without, however, in any way relieving the symptoms. Immediate x-ray showed a small shadow just below the sternoclavic-

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*From the Otolaryngological Clinic of the Children's Hospital.

ular junction and on esophagoscopy the next morning a fragment of meat bone was removed, about ¼ inch in diameter and completely occluding the entrance to the strictured portion of the esophagus. Following this there was a resumption of normal deglutition.

CONCLUSIONS

1. Foreign bodies may be swallowed and retained in the esophagus of children with lye stricture.

2. Any untoward symptoms appearing in a case being dilated successfully should be instantly investigated and foreign body ruled out.

3. Every effort must be made to prevent these patients from obtaining any form of food other than their prescribed diet.

MEDICAL PROGRESS

RECENT PROGRESS IN PHYSIOLOGY

BY PERCY G. STILES, PH.D.

The great volume of current literature in the various fields of this science makes it more and more necessary to avail oneself of monographs, abstracts and reviews. It will be well to call attention to two small books which may be of value to the busy professional reader. One is Hill's "Muscular Activity" (Williams and Wilkins, Baltimore, 1926), being the Herter Lectures for 1924. While it cannot be said to be easy reading it embodies conceptions which it is now important to grasp and which are not to be found elsewhere in such concise form. Another work dealing in similar fashion with a dozen timely subjects is Evans' "Recent Advances in Physiology" (Blakiston, Philadelphia, 1926).

THE DENERVATED HEART

It is about five years since Cannon pointed out the peculiar utility of the denervated heart as an indicator of metabolic changes in the body. When all connections between the heart and the central nervous system have been interrupted the pulse rate is affected chiefly by alterations in the chemical composition of the blood. Temperature changes will indeed modify it but these can usually be guarded against. The frequency is almost entirely independent of the blood pressure level. In view of these facts a marked acceleration of the denervated heart can generally be referred to the outpouring of active internal secretions from the adrenal medulla, the thyroid, or the liver. Of these three the adrenal is most often in evidence.

It is now pointed out (Cannon et al.[1]) that an effectual and permanent denervation of the heart is a manoeuver of some difficulty. The former procedure was to sever the cardiac branches of the vagi, thus eliminating inhibitory influences, and to remove from each side the stellate ganglion with the intention of putting a stop to reflex acceleration. It has turned out that such an operation does not entirely fulfil its purpose. For a day or two the heart behaves as though quite detached from the nerve-centers but later one discovers signs of persisting connections. Careful investigation has made it apparent that certain of the sympathetic ganglia below the stellate must be excised to complete the isolation of the cat's heart. When this precaution has been taken the animal gives no further indication of functioning cardiac nerves. It may be kept in health and comfort for a long period, the heart rate being always available as an index of the balance of humoral factors in the blood.

AN IMPROVED HEART-LUNG PREPARATION

Some years ago Knowlton and Starling developed a method for experimenting on the mammalian heart outside the body. They retained the pulmonary circulation and by artificial respiration continued to aerate the blood as it passed through the lungs. The circuit from the left ventricle to the right auricle was meanwhile maintained by artificial channels with suitable provisions for storage and for control of peripheral resistance. The blood was rendered incoagulable by the use of a drug. With this preparation much important work was done relative to the response of the heart to various conditions of arterial pressure and venous inflow. The method has lately been modified most ingeniously by Anrep and Segall[2].

Their preparation has all the features of the earlier one but, in addition, it retains the brain of the animal and the cardiac nerves. A part of the arterial stream is diverted to the head whence it returns by way of the veins. This cephalic circulation is independent of the activity of the heart for it is maintained by mechanical pumps. When all the arrangements have been made there are novel facilities for attacking certain problems. It becomes possible to discriminate between central and peripheral factors in cardiac regulation more successfully than with any of the older methods. Anrep and Segall have in particular analyzed the much discussed depressor reaction.

So far as this example of circulatory adjustment is limited to the heart two elements have been thought to enter into it. Earlier writers have explained the slowing of the rate which results from rising blood pressure as being a reflex from the distended aorta. Of late it has been urged that this compensatory inhibition may be more largely a direct effect of intracranial pressure. By the new technique it is easy to confine the rise of pressure to the aorta or, again, to localize it in the brain. It is found that inhibition results in either case. There are, then, two mechanisms which we may suppose to coöperate under the normal conditions of life. Another adaptive change which was first described by Bainbridge has been found to be demonstrable with the preparation. This is an acceleration of the heart consequent on an increase of venous inflow. It is determined to be a true reflex since it occurs when the intracranial circulation has been kept scrupulously constant.

CARDIAC OUTPUT

Previous references to this matter have been made in these reviews[3]. The human problem is naturally of paramount significance but it is of interest to consider also the findings with different animals. Marshall[4] has reported a well controlled study of five large dogs. The method employed for estimating the volume of the circulation has been that of Fick. This is a reliable one provided that three values can be accurately ascertained. These are (1) the amount of oxygen in arterial blood, (2) the amount in representative venous blood, and (3) the rate at which the animal is consuming oxygen. The uncertain quantity in observations on men is the second; it is hard to be sure that the nature of average venous blood is correctly estimated. Samples from various veins are quite unlike. With the dog mixed venous blood can be secured by plunging a needle into the right ventricle. The figures seem bound to deserve our confidence.

It appears that a dog weighing 15 kilos uses about half as much oxygen when resting as a man four or five times his size. The heart of such a dog has an output of something like two or three liters per minute. This is about one-third of the figure for the heart of a man at rest. The stroke-volume or output per beat for the dog is not far from 30ccm with moderate fluctuations. This will be seen to be quite consistent with the estimate of 100ccm, more or less, commonly cited for the human. The circulation rate in the canine male has been found far more constant from week to week than that for the female.

There has been much discussion as to the effect of muscular activity on the systolic discharge of the ventricle. It may be recalled that Henderson and Haggard have been led to the opinion that this is largely increased when vigorous exercise is taken. Marshall's experiments have only a limited bearing upon this question but one set of results may be mentioned as suggestive. The output of the heart was measured in two dogs which had been chilled and made to shiver. This is obviously a form of exercise. It was found that the stroke-volume was increased in both trials, once by about 30 per cent and again to nearly double the resting value.

BATHS

Workers at the University of Pennsylvania have been publishing papers of very practical interest on the reaction of the human system to deep baths of various temperatures. In one of these[5] the pronounced effects of long exposure to hot water are forcibly stated. When a subject is immersed in a bath which is kept at 42°C. a rapid and considerable rise of body temperature is inevitable. The organism is deprived of its normal relief through evaporation, heat is conducted inward instead of outward through the skin, while the metabolic processes still continue to add to the accumulating calories. The temperature may rise as much as 2.5 or even 3.5 degrees C. in less than an hour.

These pyrexias are accompanied by most unpleasant symptoms. Irritability and mental confusion are succeeded by sensations of tingling and these in turn usher in a severe tetany. The cause of this is readily recognized. The elevation of the temperature of the blood has brought on a hyperpnea. So far as this can be said to be purposeful its object is to remove heat from the body. Man is normally a sweating animal but under the condition of this trial he is forced to pant. It is said that when a dog pants under the influence of external heat he does not greatly increase his actual pulmonary ventilation. By his quick but shallow breathing he cools the blood in his tongue and upper respiratory tract without seriously altering the composition of his alveolar air. Technically speaking, he makes the most of his dead space air to rid himself of heat.

Unlike the dog the man in the bath breathes a much larger volume of air under the stimulus of the rising temperature. The increase may be as much as three fold. But the current rise in general metabolism is much less marked; the oxygen consumption is not doubled. The consequence is bound to be just that which follows forced breathing when the trial is voluntary, the development of an acapnia or alkalosis. There is evidence that nature makes an attempt to compensate for this by a reduction of the blood alkali as the carbon dioxid escapes but the adjustment lags in the emergency and tetany supervenes. The altered reaction of the blood is responsible. Samples of alveolar air from subjects in hot baths yield tensions of carbon dioxid in the vicinity of 20mm. of mercury which is about half the normal. It has been found as would be expected that inhaling air enriched with carbon dioxid will relieve the tetany.

In connection with this study there has been a curious incidental observation. When a man reclines in a deep bath his weight is at first increased by the waterlogging of the skin. The increment is of the order of 100 grams. The maximum having been reached the counter movement of water through the sweat-glands turns the scale and the loss of weight becomes continuous.

AIR PLANE FLIGHTS

Schneider has been for many years an acute student of the effects of altitude on the bodily economy. Much of the material which he has presented has been secured by experiments in which volunteers have breathed rarefied atmospheres in a steel chamber. In a recent paper[6] the data obtained in this way are checked against those from actual flights. Five aviators have served as subjects. Fourteen trips were made. Each time an altitude of 15,000 feet was attained in the course of about 45 minutes and the plane continued for 15-20 minutes at this level. The usual discomforts were experienced, referable in part to oxygen want and in part to cold.

The barometric pressure at 15,000 feet is somewhat more than half that at sea-level. Samples of the alveolar air of aviators at this height showed oxygen pressures very close to half the original value, 50mm. against 100. The carbon dioxide pressure which under the usual conditions is not far from 40mm. was reduced more moderately. The fact that it was lowered at all suffices to show that oxygen lack played a definite role in the observed increase of ventilation. During the short period of sustained high altitude there were indications of adaptation. The alveolar oxygen tension rose from about 50 to about 56; the breathing had gained slightly on the requirement and the blood must have been better aerated than at first. It has been demonstrated that the chamber experiments with "simulated altitudes" lead to very nearly the same results as the veritable flights.

LOW PROTEIN DIET

McClellan and Hannon[7] have reported an uncommonly impressive case of low level nitrogen equilibrium. A diabetic patient 32 years old was the subject of their prolonged investigation. He weighed about 100 pounds and was confined to his bed. Throughout a period of six months he received a daily ration furnishing 2,000 calories. The protein allowance was cut down from an original standard of 50 grams until it was but 20, at which figure it remained for 106 days. This is about one-fifth of the traditional quantity; in terms of nitrogen it is just over 3 grams per day. The patient lost less than this amount in the urine. When the fecal loss was taken into account he was found to be slightly short of a nitrogen balance. But when he received 30 grams or more of protein daily he retained some nitrogen.

METABOLISM IN FASTING

Kleitman[8] has recorded rather briefly a meritorious study in this field. He has had under observation a well trained faster (Hoelzel) who in the present instance went 42 days without food. He lost 25 per cent. of his initial weight. The shift in the basal metabolic rate was substantially what has been registered in other cases. In the gross the fall was 36 per cent. In calories per kilo this was a reduction of 19 per cent.; for a unit of surface it was a cut of 29 per cent. There was the familiar slowing of the heart.

The new emphasis in this article is in connection with metabolism during the subsequent or recovery period. It was only after about one month of feeding that the original rate was restored. From this time onward the basal metabolism proved unexpectedly sensitive to changes in the diet. After a few days of liberal feeding it was found to rise distinctly and more markedly when there had been an increase of protein. Under the influence of various rations the daily calories (basal) shifted between limits as widely separated as 1500 and 1900. It appears that Hoelzel is not only an expert in fasting but a gifted feeder. When required he consumed 4 pounds of meat daily, during another period the whites of from 30 to 42 eggs.

Kleitman touches briefly on an interesting question: the cause of the lowered rate of the metabolism in fasting. The slowing of the bodily processes is in the interest of conservation and clearly desirable but to say this is not to explain it. It has occurred to more than one physiologist that the thyroid may be concerned. We know that in general the activity of this organ is reflected in the intensity of the metabolism. It is known also to lose mass in conditions of subnutrition. But we are not at present warranted in concluding that the prompt economizing of resources which is observed in fasting is secondary to changes in the thyroid.

THE POSTCONTRACTION OF MUSCLE

It is a familiar fact that when one has made a strong effort to raise the arm while actual movement has been prevented by an obstacle there is likely to be an involuntary execution of the motion when the impediment is removed. The arm seems to float upward in the absence of volition and to the surprise of the experimenter. As the trial is usually conducted the deltoid muscle is the one chiefly responsible. The phenomenon has been found to present features deserving of study and we have the record of a painstaking analysis by Forbes, Baird and Hopkins[9].

There has been a difference of opinion as to whether such a contraction is one spontaneously originating in the muscle or whether it is dictated through the centers. Some evidence is obtainable from the electrical behavior of the part. Contractions of the usual type, that is, tetanic performances of reflex or voluntary causation, are accompanied by the development of rapid fluctuations of electrical potential known as action currents. When these are registered by photographic appliances in connection with the string galvanometer a characteristic picture is obtained. Forbes and his colleagues have shown that the involuntary "postcontraction" is signalized by action currents which are in no respect unlike those which attend a voluntary effort. It is therefore fair to infer that the curious manifestation of muscular activity is nervous in origin.

The probable course of events is as follows. When the primary effort to raise the arm is made, the obstruction limiting it to an "isometric contraction," sensory nerve-endings in the straining muscle are stimulated. Conditions are established which prolong this excitation beyond the period of conscious exertion. The postcontraction then arises as a proprioceptive reflex. The stimulating condition may be mechanical or it may conceivably be due to metabolic products.

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SOME FACTS ABOUT THE PUBLIC HEALTH SERVICE

The pay of commissioned officers of the Public Health Service ranges from $2,699 for an assistant surgeon to $7,179 for an assistant surgeon general, both without dependents. For officers having dependents, the salary range is $3,158 to $7,200. A Surgeon General receives $7,500 if he has dependents, and $7,179 if he has none. These salaries are established by the same law which fixes those of officers of the Army and the Navy. The grades are comparable to those of medical officers of the Army and Navy. Advances in pay in higher grades are dependent, however, upon length of service rather than promotion in rank. By reason of legislative restrictions of long standing, promotions in the higher grades are almost negligible.

All other personnel of the Public Health Service is selected from lists of eligibles established by the Civil Service Commission under civil service law and regulations. The diverse system of appointment sometimes presents difficulties when men of special scientific attainments are required for specific work involving change of station. It would be highly desirable from the standpoint of the Public Health Service if all medical and scientific personnel subject to emergency and liable to changes of station were selected in the same manner as the commissioned officers. The adoption of this policy would promote scientific investigations and be in the interest of efficient administration.

For administrative purposes the Public Health Service divides the country into six sanitary districts with a medical director assigned to each district. Through these directors the Surgeon General keeps in touch with State and local health authorities, universities, industries, and other interests favorably affected by public health work. These directors also make inspections of service stations and activities with a view to their coördination, investigate administrative difficulties, and devise means for the prevention and suppression of epidemics liable to occur within their districts. The ordinary routine of stations is handled by the officers in charge. The district directors accordingly act largely in an advisory capacity without the necessity of considerable personnel.

DIPHTHERIA ON THE WANE IN CONNECTICUT

Fewer cases of diphtheria were reported to the State Department of Health for the first nine months of 1926 than for the corresponding period of any recent year. In view of the increasing use of toxin-antitoxin to protect children against diphtheria, this result is gratifying.

Diphtheria usually reaches its low point in incidence during August and begins to increase in prevalence in September. This year the number of cases reported dropped from 50 in August to 42 in September. Only once before in the last twelve years has this occurred. In 1923 the number of cases reported dropped from 124 in August to 115 in September.

The number of diphtheria cases reported in Connecticut so far this year by months from January to September inclusive were 185, 183, 190, 65, 83, 53, 47, 50 and 42 respectively. There were reported for the first nine months of each year from 1915 to 1926, inclusive, totals of 1,418, 1,350, 1,308, 1,632, 1,760, 2,195, 2,241, 1,799, 1,655, 1,423, 1,228 and 898 cases respectively.

It will be noted from these figures that the decline in number of cases has been steady and consistent for the past five years, with a rather marked drop during the present year. A study of the monthly incidence of diphtheria for the past twelve years indicates that with very few exceptions fewer cases have been reported each month for the present year than for the corresponding month for any recent year.

Taken altogether, the figures available would indicate a lessened prevalence of diphtheria. This experience in Connecticut is shared by other States, particularly in communities where the use of toxin-antitoxin to protect children against this disease has become general.

IMMUNIZING PROGRAM STILL NECESSARY

It may be well to sound a warning that these gratifying figures do not mean that the battle against diphtheria is won. Eternal vigilance is the price of freedom from this disease. To have the rate continue its downward trend more and more attention must be given to the immunizing process. Parents who do not immunize their children are responsible if their children contract diphtheria during the hazardous years of early life. The germ of diphtheria is widely distributed and immunization is the only protection from its ravages.—*Bulletin of the Connecticut State Department of Health.*

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12491

A CASE OF CHRONIC HEADACHE

MEDICAL DEPARTMENT

A married Italian woman fifty years old entered August 4 complaining of headache of three or four years' duration. She spoke very little English and was of low intelligence. The history was obtained with considerable difficulty from her daughter. It contains some contradictory statements, and is by no means reliable.

She described the headache by saying "her head was always heavy." The daughter thought the front of the head above the eyes was especially involved. The headache had been constant, often keeping her awake at night and frequently waking her. For four years she had slept very little because of headache and much worry over some trouble with a sister. For several years she had been weak. She had been growing worse. For two or three years she had urinated three or four times at night. Her daughter thought she had been somewhat dyspneic on exertion. Four months before admission she consulted a physician who told her her blood pressure was 240 and gave pills and Epsom salts, which she vomited, and a diet which she did not follow. Her menstruation, which had previously been regular, ceased at this time. For the past four days she had vomited everything taken, had been in bed on account of weakness, and had been growing increasingly stuporous, with her eyes always half open. She could understand what was said and could answer a few words.

Her husband, who had been dead four years, had often struck her on the head when he was intoxicated. There were four children living; three or four died in infancy.

Before this illness she had always been strong. Several years before admission she had mumps. For a long time before the illness she occasionally complained of ringing in her ears. For many years she had had several mild nosebleeds every year. She had had a cough for many years and raised much sticky white sputum. For a long time her bowels had been constipated, requiring cathartics once a month or oftener. She tended by nature to worry. Her memory was failing a little. She took several glasses of wine a week. Her daughter thought she had lost a little weight.

Examination showed a fairly well nourished woman, acutely ill, semistuporous, sweating profusely. There was slight ptosis of the left eyelid. The teeth were carious. The neck was stiff and tender. The lungs were clear. The apex impulse of the heart was not located. The left border of dullness was 10½ centimeters from midsternum, a centimeter and a half outside the midclavicular line. The supracardiac dullness was 6 centimeters, the right border of dullness 4 centimeters from the midline. The action was rapid and regular, the sounds snapping. The aortic second sound was much accentuated and snapping. A questionable systolic murmur was heard over the mitral area. The blood pressure was 250/150 to 108/88 (after venesection). Deep in the pelvis, over the symphysis, a mass was felt, possibly the uterus. Pelvic examination showed vaginal bleeding. The cervix was soft. There was questionable Hegar's sign. The fundus was three fingers above the symphysis (three months' pregnancy ?). The left arm and leg were motionless and flaccid. The ankle-jerks and knee-jerks were not obtained. There was Kernig and bilateral Babinski, both more marked on the left. The pupils were normal. Fundus examination showed the disc edges blurred. The degree of choking could not be studied because of poor coöperation. There were several small hemorrhages in both retinae and one large one in the left eye.

The amount of urine is not recorded. The urine was cloudy at one of two examinations, specific gravity 1.025 to 1.022, a large trace to a very large trace of albumin at both examinations, a few to rare leucocytes at both, very rare red cells at one. Blood examination showed 22,600 to 27,700 leucocytes, 77 per cent. polynuclears, 18 per cent. lymphocytes, 5 per cent. large mononuclears ? (slightly atypical); hemoglobin 100 per cent., reds 6,096,000, slight anisocytosis, platelets diminished (?). Wassermann negative. Non-protein nitrogen 38 milligrams.

The orders were for caffein sodium sailcylate five grains s.c., rectal taps of five per cent. glucose every three hours, magnesium sulphate an ounce and a half by nasal tube, and Karell diet.

The temperature was 103.3° to 102.1°, the pulse 104 to 160, the respiration 21 to 46.

A gynecological consultant was called, and after a careful examination stated that the uterus was enlarged but firmer than the pregnant one and the cervix though patulous was not very soft. There was no evidence of pelvic infection or of obvious fibroids. He did not believe her pregnant, but could not be perfectly sure.

Lumbar puncture was then done. Bloody fluid was obtained. The blood pressure fell and the pulse rose. At 11 p.m. venesection was done. After it the blood pressure fell still lower and remained down. The following morning the patient showed marked blotchy cyanosis of the limbs and trunk, rapidly deepening. She remained in deep coma and died that afternoon.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

The commonest forms of headache do not begin at forty-six or seven. The commonest forms of headache of course are those of unknown origin, what we call migraine, beginning in childhood ordinarily. The only good thing to say about them is that they may stop at about this age. What headaches then might easily be supposed to begin at this age? Those with renal disease, with high blood pressure without renal disease, or with syphilis. Those are the only ones that I think of, so that insofar as this is the lead to this case those are the three causes I should have in my mind, if I did not look ahead.

"Her head was always heavy." I have often been deceived because I did not distinguish between real pain in the head and pressure. When a patient says he has headache I always ask, "Do you mean pain or a sense of pressure?" That is a very different thing. People are very apt to say headache when they mean pressure. The so-called neurasthenic headaches, which come in the people of so-called neurasthenic type, are almost certain to be pressure, or as the French say *tete en casque,* the sense as of a helmet pressing on your head, or of a tight band around your head. This is the type of headaches we get in neurasthenic patients, that may go off if we can secure a switching of attention to other matters.

"For two or three years she had urinated three or four times at night." If we are sure that she began to do this only within two or three years and that it is not a matter of habit it is important, much more so in a woman than a man, because it is often the earliest sign of a hypertension or of a nephritis.

We have almost the complete picture of what we used to call uremia. I think that to-day clinicians are growing more and more uncertain as to whether there is anything that deserves that name. A great many of the symptoms which we used to put down as uremia, a poisoning of the blood, are now believed to be due to mechanical causes or hypertension. I no longer use the term uremia.

Her husband often struck her on the head when he was intoxicated. Of course the question is whether that could have caused headache. I should say certainly not. When you consider the life history of prize fighters and their freedom from headaches you are pretty clear on this matter.

Nosebleeds often accompany hypertension, giving relief—one of the hemorrhages for which we are glad.

The past history, which represents the general going over of the routine questions which we ask every patient in the attempt to elicit further information, on the whole does not seem to add anything to what we had before. We go on to the physical examination in the same frame of mind that we were before reading it.

NOTES ON THE PHYSICAL EXAMINATION

Hegar's sign I believe is the softening of the lower portion of the uterus as a sign of pregnancy.

"The left arm and leg were motionless and flaccid." That shows a probable left hemiplegia.

I should say that there is nothing about the urine to make us suspect disease of the kidney. The non-protein nitrogen backs up what we said about the kidneys.

"Lumbar puncture was then done." Whenever we come to that point we ought to ask ourselves, "Was this the right thing to do? Was there any advantage in it?" When tumor of the brain is possible I should say that we are never perfectly secure in doing lumbar puncture.

We have two factors to lower the blood pressure; lumbar puncture does it very strikingly, and venesection was done on top of that.

DIFFERENTIAL DIAGNOSIS

Here is a patient who comes in with headache. It is associated with a hypertension which from the beginning, so far as we know, is very high. She has no other symptoms except those that can be perfectly well explained by hypertension. She has no cardiac, respiratory, digestive or nervous symptoms except those, as I have said, which we often see with hypertension. Then she becames semi-conscious and gets a hemiplegia with fever and leucocytosis. I imagine the question of meningitis arose in the minds of those who saw her. It is always worth while to remember that you usually do have both fever and leucocytosis from pure cerebral hemorrhage. I happen to be the person who first brought that to light about thirty years ago; and I think most people do not realize it yet. Since you can get fever and leucocytosis in cases proved at necropsy to have nothing but cerebral hemorrhage, they do not help us in a differential between meningitis and hemorrhage. The lumbar puncture gives us bloody fluid and no evidence of a cellular increase on the white side. I think it is well to suppose that the terminal event was cerebral hemorrhage, due I should say to hypertension, the hypertension of unknown cause without kidney trouble. That causes headache, nosebleeds and finally bleeding in the brain with hemiplegia and death. Did we hasten death by our treatment? I do not see any sufficient reason to suppose so. Most patients become first semiconscious, and hemiplegia will go on to death from cerebral hemorrhage. We did not save her, but I do not see sufficient reason to say that we hastened things.

Dr. Richardson ought to say there is cardiac hypertrophy and dilatation without any valve lesion. There is some evidence of passive congestion almost always found in these cases whether we find any in life or not, but not very much here; there is no edema.

Did you open the head, Dr. Richardson?

Dr. Oscar Richardson: Yes.

Dr. Cabot: He should say that there is a brain hemorrhage on the right side. Beyond that I will not try to localize it. I suppose it is on the right side—the hemiplegia was on the left, if I am rightly informed. The kidneys are sound. There are no other essential lesions anywhere in the body.

A Physician: How about the stiff neck? Is that common?

Dr. Cabot: I should not say that it is common in cerebral hemorrhage. I should say that is one of the features not explained by my diagnosis.

A Physician: Isn't it common in coma?

Dr. Cabot: Not coma in general. Take alcoholic comas, sunstroke comas, poisoning comas and diabetic comas, most of them do not have stiff neck, I should say.

A Physician: How about the uterus?

Dr. Cabot: I have nothing to say about that. Far be it from me to try to go beyond the returns as reported by the consultant. If she was not pregnant I suppose he thought it was a tumor.

A Physician: She had headache for four years. Do you think she might have a metastasis in the brain?

Dr. Cabot: I think it is too long.

A Physician: What was the cause of the hypertension?

Dr. Cabot: I have no idea.

Dr. Francis T. Hunter: When she came in we got some hint from the daughter that the patient's social history was not of the best, and we suspected that she might have a hypertension plus the added load of a pregnancy, resulting in a cerebral hemorrhage and beginning miscarriage. On the other hand it was considered possible that although she might not have been pregnant she might have thought she was on account of the cessation of her menses, and had gone to someone and had an attempt at abortion with resultant sepsis. Either explanation would account for the pelvic condition.

Dr. Cabot: From the additional history it might seem somewhat more likely that this was a pregnant uterus. I do not say so. Of course if it had been a pregnant uterus it would have increased the hypertension, as has just been said.

Dr. Hunter: There was a considerable amount of blood from the cervix.

Dr. Cabot: That suggests that there might have been some attempt at abortion.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Hypertension.
Cerebral hemorrhage.
Nephritis.

DR. RICHARD C. CABOT'S DIAGNOSIS

Hypertensive heart disease.
Hypertrophy and dilatation of the heart.
Cerebral hemorrhage, right.
Chronic passive congestion, slight.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

(Primary hypertension.)
Cerebral hemorrhage, right cerebral hemisphere.

2. *Secondary or terminal lesions*

Hypertrophy and dilatation of the heart.
Hemorrhagic edema of the lungs.
Hemangiomata of the liver.
Hypertrophy of the spleen.
Purulent endometritis.

3. *Historical landmarks*

Slightly defective closure of the foramen ovale.

Dr. Oscar Richardson: She was a stout woman with a large amount of subcutaneous fat.

The peritoneal cavity, appendix, esophagus, gastro-intestinal tract and the mesenteric and retroperitoneal glands were frankly negative.

As regards the uterus, it was a little enlarged but showed no definite evidence of pregnancy. There were no tumors. There was a moderate amount of purulent endometritis.

Dr. Cabot: So that perhaps it had recently been emptied?

Dr. Richardson: Yes; they might have thought there was something there and attempted to. No definite evidence of pregnancy was found at necropsy, and no tumors except for one small polyp. The vagina, tubes and ovaries were negative.

There was 100 cubic centimeters of brownish red fluid in the right pleural cavity; none on the left. The lungs showed well marked hemorrhagic edema. The bronchial glands were negative, and there were no pleural adhesions.

The pericardium was negative. The heart weighed 485 grams. That is a frank hypertrophy of the heart. The valves and cavities were negative except for some dilatation of the cavities on the right. The right ventricle wall measured 4 millimeters, the left 15, indicating hypertrophy. Microscopic examination of the myocardium was negative. The aorta and its great branches were negative.

The liver, gall-bladder, bile ducts, pancreas, adrenals and kidneys were negative.

The spleen was a little enlarged and a little soft. Of course part of that enlargement of the spleen may very well be Mediterranean.

That brings us to the head. The meninges were frankly negative. The convolutions of the convexities were slightly flattened, but the vessels of Willis, sinuses, middle ears, pineal and pituitary glands were negative. There was a frank hemorrhage in this brain, but the vessels outside the area of hemorrhage were negative. There might have been arteriosclerosis of a vessel in that portion which was lost in the hemorrhagic mass. The hemorrhage was on the right side and in the parieto-occipital region measuring about 9 by 6 by 6 centimeters, presenting as disintegrated brain tissue, old blood clot and some blood. The hemorrhage extended nearly through the cortex on the right lateral aspect and inwardly extended to the region of the floor of the right lateral ventricle just anterior to the right optic thalamus, where it had ruptured the floor over a very small area. The basal ganglia otherwise were negative. The right lateral ventricle contained a rather small amount of thin bloody fluid and blood clot. There was not a very great amount in the other ventricles.

The culture from the heart blood was negative.

In the liver there were several hemangiomata, which is a common enough occurrence.

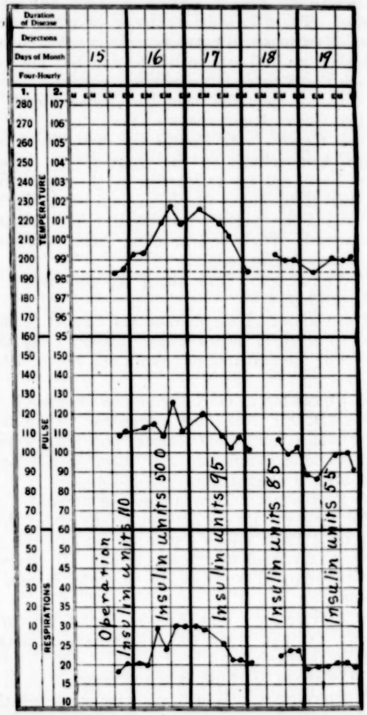
Dr. Cabot: I think it is worth while to take a minute to say that the present type of death is the commonest of all. We are getting control over tuberculosis and infant mortality, but I do not think the outlook for any improvement in the control of this disease is at present good at all, because we know nothing whatever as to its cause.

CASE 12492

DIABETIC COMA AND AN ACUTE ABDOMEN

Surgical Department

An American schoolgirl of sixteen was brought to the Emergency Ward September 15. The complaints were drowsiness and deep breathing. She had been treated in the wards from August 15 to September 5 a year previously for diabetic acidosis and coma. In the interval between her hospital stays she was treated in the Diabetic Clinic. She was sugar free from September 29 to October 27 on insulin 12-12-12. February 2, seven months before her second admission, she weighed 119 pounds and was getting too fat. She was put on insulin 15-10-10 and did well when last seen in the Diabetic Clinic, August 31, two weeks before her readmission. Her weight was then 121½, her blood pressure 144.



At the time of her second admission she said she was in her usual good health the day before. She took her usual diet, (which she was believed to have followed faithfully and intelligently for the past year,) and took her insulin 15-10-10 as usual. The morning of admission upon awaking she had severe pain in the right eyeball and felt very drowsy. She also noticed that she was breathing very deeply and rapidly. Her bowels moved without any abnormality at the accustomed hour. She had no appetite, but no nausea, vomiting or abnormal pain or tenderness. The family physician sent her to the Emergency Ward with a note stating that she was sugar free and was given 20 units of insulin at 11 o'clock. She was referred to the hospital in a three-quarters comatose condition.

Examination showed her well nourished and dehydrated. She could be roused into apparently intelligent conversation. She took rapid deep breaths, forty to the minute. Her breath reeked with acetone. The heart and lungs were negative. The abdomen was held very rigid. She could not be made to complain of pain or tenderness anywhere. Both lower quadrants were got into much more easily than the rest of the abdomen. Peristalsis was present by auscultation. There was dullness to percussion. The liver dullness was normal. Rectal examination was negative. The pupils and reflexes were normal.

Before operation a catheter specimen of urine showed specific gravity 1.030, the slightest possible trace of albumin, 3 to 4 per cent. sugar, ferric chloride and sodium nitroprussic tests very strongly positive. Sediment showed showers of granular casts. Blood, 17,800 leucocytes.

The chart to September 19 is given. The temperature and respiration afterwards were not remarkable. The pulse was 70 to 109.

The orders at admission were, "Surround with hot water bottles and keep covered up. Force fluids if possible, but do not let her drink more than a quarter of a glass in ten minutes. Insulin 25 units every hour beginning at half past two p.m. regardless of the color, unless sugar free. Orange juice three ounces every three hours. Blood pressure every two hours."

A surgical consultant advised operation. At 5:20 p.m. the day of admission it was done. That night the patient went into shock. She was given caffein sodium salicylate, adrenalin, pituitrin, and insulin amounting to 110 units for the day. At four o'clock the next morning 600 cubic centimeters of blood was transfused. The blood sugar at that time was 360 milligrams. Later tests on that day showed it to be 169 and 304. The following day the insulin was continued, 500 units in all for the day. The water, orange juice and blood pressure tests were also continued. In the afternoon gastric lavage was done with 2000 cubic centimeters of 2½ per cent. sodium bicarbonate solution. Murphy drip with 2½ per cent. glucose was begun. The treatment was continued on the 17th. September 18 the patient was given soft solids, 100-80-90, in three major and three minor meals. The insulin was continued on the schedule above.

The wound became septic. It was treated with Dakin's irrigations. By October 14 it was practically healed. A blood sugar test October 16 showed 274 milligrams. October 19 the patient was discharged.

Discussion

BY LELAND S. MC KITTRICK, M.D.

The most important point of the past history is that she was a diabetic who was well trained and knew how to take care of herself, and apparently, so far as we could tell from her Out-Patient record, was doing well.

I do not know what pain in the right eyeball means.

Probably, with her training, she knew enough to know that rapid and deep breathing for her was a danger sign.

Here is a girl of sixteen, a diabetic, doing well on fifteen-ten-ten units of insulin, who on her usual diet goes to bed feeling perfectly well, who wakens in the morning with signs of coma, who comes into the hospital, is comatose but can be aroused, whose physical examination is negative except for a rigid abdomen. The preoperative temperature was subnormal. Obviously here is that very trying situation of a patient going into coma who has no right to go into coma, and, therefore, the necessity of looking around for some definite cause.

She has a rigid abdomen, a leucocytosis of 17,800, and the problem is: has she or has she not a surgical abdomen? I wish I knew some way to determine whether or not a patient with impending coma has an acute surgical abdomen. Pain as an early sign of coma is apparently a very common thing. A rigid abdomen is an exceedingly common thing in diabetic coma, and leucocytosis is likewise the rule rather than the exception. The leucocytes can go as high as 44,000 according to Joslin without any demonstrable infection to account for it. Pain, rigidity, and leucocytosis apparently clear up with the clearing up of the diacetic acid or with the other evidences of coma.

From examination as given here I think it is pretty difficult to make a positive diagnosis, so much depends upon the personal examination of the surgeon who saw the patient. The absence of pain to me would be rather important, because this is an intelligent girl, able to talk and answer questions at the time she came in, (or at least someone gave a fairly definite history,) and I do not believe that it would be common to have an acute abdomen—naturally the thing under discussion in a girl of this age is an appendix—without its being started with abdominal pain. I do not believe that the first sign of an appendix would be pain in the right eyeball and a feeling of drowsiness.

Then a second point which to me is very important is the absence of tenderness. These patients are frequently generally tender, and I believe—I do not know because I think all of us have seen too few of these patients—but I believe that usually in an acute abdomen we get some point of localized tenderness, the same as we do in a non-diabetic, providing we look for it carefully, in *all* parts of the abdomen. That means in the ileocecal region and in the pelvis as well as in the more accessible portions of the abdomen. When I speak of localized tenderness of the abdomen I include all of those areas. That is why I say so much depends on the individual examination of the surgeon in making a diagnosis. I believe that if the surgeon who saw this patient was unable to say definitely that she did not have an appendix he should operate on her; that a properly done operation, that is, an operation done under novocain, would allow us rationally to determine the presence or absence of a severe acute intraabdominal infection. Then if one wants to go ahead and do something, or if one is not quite sure about the findings, ethylene will give sufficient relaxation to complete the operation, doing infinitely less harm to the patient than waiting to see what the next twenty-four hours will bring. The one thing I am sure of is that we usually find a lot more than we think we shall. I have seen a patient develop and die of a general peritonitis from a ruptured appendix while on the wards and under the care of excellent men, both medical and surgical. This man developed an acute appendix, had it (going back over his chart) for five days. It perforated and he died. He carried that appendix without a word to anybody, was up and about, ate his meals, and did not have enough stomach-ache to mention it. His first complaint was when he perforated. This experience and others have convinced me that if we are in doubt and if the patient is in a good hospital where she will be properly cared for diabetically, and the surgeon cannot with reasonable assurance exclude an acute abdomen he had better not wait, but explore the abdomen and do what is needed.

Dr. Cabot: Do you think the diabetic is less sensitive, less communicative?

Dr. McKittrick: I do not know, but their reaction to stimuli is certainly different. In the gall-bladders that I have seen the proportion of gall-bladders that had gone on to chronic perforation or other complication was perfectly extraordinary, with symptoms no more than we get with much less pathology in a non-diabetic patient. Just as we see a patient with a perfectly awful sore on his foot or body, and complaining very little about it.

Dr. Cabot: That is very interesting to me, because people often say the same thing about the lungs. I thought it was something peculiar to the lungs, but what you are bringing out is that it is the same all over the body.

Dr. McKittrick: Dr. Joslin saw a Turk in his office recently, complaining of pain. He knew he was a diabetic. He said to him, "You had better go to the Deaconess Hospital. I think you have some pathology in your abdomen. I do not know whether it is a gall-bladder or what, but you had better find out." The next day he had an emergency call from the neighboring town where the man lived. He was almost unconscious. I saw him immediately after he entered the hospital. He had a pretty rigid abdomen, rigid all over, but he had no definite localized tenderness that we could find anywhere, and on the basis of his widespread rigidity with short history, of his coma, and in the absence of any localized tenderness we decided against an acute abdomen and waited. His pain all cleared up within twenty-four hours, as his coma did. So undoubtedly that was a case of impending coma with pain an early symptom, particularly since subsequent studies failed to reveal any intraabdominal pathology.

Dr. Cabot: So if you have a severe lesion you don't have pain. If you have pain it doesn't particularly matter.

Dr. McKittrick: I say it is up to the judgment of the particular surgeon who sees the man. If he feels doubtful and thinks there may be an abdominal lesion which can be corrected and in which haste is essential, it is infinitely more important to operate on the diabetic than on the non-diabetic.

Dr. E. M. Daland: I saw this patient before operation. She was beginning to come out of coma. She had had a lot of glucose. She said she had no pain, but she was just doped enough so that we did not dare to rely on what she said, and we made our diagnosis on the rigid abdomen. At the time I saw her the lower abdomen on both sides was more rigid than the upper. Rectal examination was negative, but we made a diagnosis on the rigid abdomen and the white count. We realized that sometimes people in diabetic coma do have a rigid abdomen, and we thought of what would happen if we let the patient wait. But we decided that if the patient did have an appendix and general peritonitis, being a diabetic she would need to be operated on much sooner than anybody else. And with our eyes wide open we operated.

Dr. McKittrick: I do not suppose everybody would agree, but I should call it good surgery.

A Physician: What is your prognosis in this case?

Dr. McKittrick: They do very well. From what I have seen—and now there are several cases that I happen to have operated on who had an impending coma and who had had no pre-operative preparation whatever—I believe it is a fair statement that a patient who is in no more severe coma than this patient ought rarely if ever to die of her diabetic condition, unless there is some complication.

A Physician: Would you advise a strict diet, not to have any shock?

Dr. McKittrick: I would advise her getting into a hospital where a good diabetic specialist will care for her. Then he will say to the surgeon: "You go ahead and operate and I will treat the diabetes." But that propaganda cannot go out here, there and everywhere where they cannot take care of the diabetes. That is a very important consideration.

PRE-OPERATIVE DIAGNOSIS

Ruptured appendix.
Diabetes.

OPERATION

Local novocain. Right rectus retracting incision. As soon as the abdomen was opened exploration was attempted, but was too painful. Ethylene was then used. The appendix was long, but showed nothing pathological grossly. It was removed, the stump inverted and the wound closed in layers.

PATHOLOGICAL REPORT

Appendix. Microscopic examination shows no histological changes.

BACTERIOLOGICAL REPORT, SEPTEMBER 29

Culture from the wound shows a moderate growth of bacillus coli.

Further Discussion

I assume the pelvis was all right.

She was operated at 5:20 on the 15th. The following afternoon her temperature reached 101.8°, which to the surgeon means infection somewhere. It may be in the wound, it may be in the abdomen, but a postoperative temperature always means infection until we prove it something else.

It is interesting to note the insulin she was getting. I would like to ask a question: Why do you give orange juice or carbohydrates when the patient is already full of sugar and acid? Twenty-five units of insulin an hour with a patient full of sugar and acid and with impending coma, and then orange juice every three hours.

Dr. Cabot: Of course orange juice is one of the ways of fighting coma.

Dr. McKittrick: But isn't the patient getting enough? It seems queer to keep putting stuff into a person who is already full of it.

The thing about this that must impress a person of a more or less surgical turn is that to have a girl of sixteen go into surgical shock after an operation under novocain and ethylene, when only her appendix is removed, is an extraordinary thing.

Blood sugar 360 milligrams I suppose was taken before the transfusion.

Isn't 500 units of insulin in twenty-four hours quite an insulin intake?

Dr. Roy R. Wheeler: Apparently she was not in coma, and because she was not I should say it was a very large amount.

Dr. McKittrick: I raise this question because I am afraid of large doses of anything in a sick surgical diabetic, and because the immediate post-operative problem in this case is to determine whether this patient is in surgical or hyperglycemic shock. I happen nearly to have killed one patient by operating on him during a hypoglycemic reaction following insulin five units given three hours previous to the time I operated on him for an infected hand. As soon as he had had one whiff of gas he stopped breathing, coming as near death as any patient I have ever seen. After it was all over we found out that he was having an insulin shock at the same time that he was being operated on. I recall another surgical patient who was having very little insulin, who was very sick, was perspiring, pale, and obviously having an insulin shock. So that in sick surgical patients I must confess that I am very uneasy about large doses of insulin, particularly when they are not in profound coma.

Then again it is rare to see a patient in surgical shock with a pulse of 124. They are usually rapid. I do not say that they are always. But the pulse in surgical shock is usually a rapid one.

The wound becoming septic obviously accounts for the temperature.

A Physician: In the case of a girl who used to work in a candy-store and ate too much candy, but refuses to go for an injection of insulin, what would you do?

Dr. McKittrick: I do not know. That is entirely the medical aspect of diabetes, about which I know nothing except by contact. I do know that surgically the diabetics are the easiest patients to handle that we have, and their convalescence is less stormy; and considering everything, they do, I should say, better than any similar type of patient that we have.

Dr. Daland: What does the anesthetic chart show of the condition of that patient? Was she in shock, and how long did the operation take?

Miss Painter: The operation took just an hour.

Dr. Daland: The pulse was 120 to 130 during operation, and after operation was 110, running along 110 until sometime on the afternoon of the 16th after her transfusion, when it was 120. Her pulse at eight o'clock the night that she was supposedly in shock was 112.

Dr. McKittrick: What about the pros and cons of that sort of situation?

Dr. Wheeler: I followed this girl through her whole illness. I knew her very well, and followed her most carefully. She always was a severe diabetic and the type of child that the least infection would tip over into coma without much warning. When I saw her in the hospital after operation I was mean enough to make this consultation, because it seemed to me so striking of other cases that we had seen before: "I wonder if the abdominal symptoms were those frequently observed in severe acidosis." In other words, any child with severe acidosis or in diabetic coma frequently has abdominal pain. Diabetic acidosis frequently has a little bit of temperature, unless they are in actual coma, when it is below normal. Diabetic acidosis usually has a white count, presumably from absorption of extravasated blood from the intestinal mucous membrane. This girl apparently presented all of those things or most of them, and it seemed to me that it was quite a typical case of diabetic coma and nothing else.

Dr. McKittrick: What is the rationale of a girl who is in coma, full of sugar and full of acid, being given large doses of insulin and in addition carbohydrate?

Dr. Wheeler: If you know their initial blood sugar and fluid blood volume you can figure out roughly the amount of available glucose that patient has in the blood stream. Therefore you can give insulin until that blood sugar is utilized. At the time that occurs the acidosis has usually cleared up also. If on the other hand the acidosis has not cleared up, then they need more carbohydrate to burn up the remaining acidosis. Then I should give orange juice.

Dr. McKittrick: But not earlier than that?

Dr. Wheeler: No, not until it is indicated. I have little else to say. It strikes me, knowing this girl, who is getting along perfectly well on thirty-five units of insulin, that 500 units in twenty-four hours is a lot, and I should guess that her shock was a hypoglycemic reaction rather than surgical shock.

Dr. McKittrick: I think that is a very important point, because if we are going to send patients into surgical shock after operation we obviously cannot take that stand.

A Physician: How often do you have insulin shock with a normal temperature?

Dr. Wheeler: I do not believe temperature has anything to do with it. They can have insulin shock with any kind of temperature.

A Physician: Most insulin reactions that I have seen have had subnormal temperature.

Dr. McKittrick: This holds also in surgical shock; in fact in any kind of shock, it does not make any difference whether it is surgical or due to hemorrhage or insulin.

Dr. Wheeler: I was speaking about acidosis, not coma or shock, when I said that they might have a little temperature.

Dr. Richard B. King: I happened to see this patient that morning. She was in pretty definite surgical shock. I do not see how she could have been in hypoglycemic shock with that blood sugar of 360. It was done immediately. I saved a sample which was examined by the regular laboratory technician the next day, six hours later, and that showed 304 milligrams sugar.

Dr. McKittrick: That ought to be pretty definite evidence against hypoglycemic shock.

Dr. King: She was definitely acidotic then.

Dr. Wheeler: We sometimes see insulin shock even without hypoglycemia. When the blood sugar level has been rapidly reduced from a much higher level to a lower level, symptoms not unlike hypoglycemic shock often appear.

Dr. McKittrick: It is very interesting and rather important. I do not think it happens very often. To go into surgical shock even with a sick diabetic is an exceedingly rare thing, and I do not think that this instance ought to influence us unduly, because even the dangers of surgical shock are not to be compared with the dangers of peritonitis.

A Physician: Did you discharge this patient with orders to continue?

Dr. McKittrick: She was discharged to the Diabetic Clinic. She is being followed very carefully from the diabetic point of view, and is getting more insulin now than she was before this happened.

A Physician: She suddenly became acidotic and was sent to the hospital?

Dr. Wheeler: The reason was because she suddenly skipped her insulin for a couple of days. She was so afraid to tell the doctors here that she had skipped her insulin that she said she had taken it.

A Physician: Might a patient have hypoglycemia and coma at the same time?

Dr. Wheeler: Your question is, could one give a diabetic enough insulin to bring his blood below a normal level even in the presence of acidosis?

A Physician: My question was, given a high blood sugar one might give a dose of insulin and reduce his blood sugar and he could still have an acidosis.

Dr. Wheeler: Surely, that is perfectly possible.

A Physician: In giving that dose of insulin do you take half the body weight as your fluid volume?

Dr. Wheeler: I do not think you can treat diabetic coma that way. It is a procedure where we have to go from hour to hour by the findings, because it varies tremendously. At one time I saw a patient who was admitted to the hospital for insulin treatment, which he did not get because he did not need it. He asked the doctor to let him have one dose, just to say that he had had it. The doctor was kindhearted and gave him a very small dose, and the man had an insulin shock. On the other hand to a girl like this twenty-five units would not make much difference. So I do not think we can lay down any cut-and-dried laws for treating a diabetic coma.

A **House Officer**: Can you suggest anything that would have thrown her into coma, or do they ordinarily go into coma without any infection?

Dr. Wheeler: I should say in a case like this the reason is because they break their diet or do not take their insulin. The only other cause would be some infection.

A **House Officer**: Of course that was what started us off.

Dr. Wheeler: It is interesting to me because we have seen four or five people recently, in fact three in this hospital within the past month, with this girl's story absolutely, that is with vague abdominal pain and acidosis. The other two were not operated on, and apparently, from what I can gather from talking with the patients and house officers, there was just as much indication to operate on the other two as there was on this girl.

DIAGNOSIS

Diabetes mellitus.
Diabetic acidosis.
Post-operative shock.

CASE 12493

THE OPERATIVE FINDINGS IN A CASE OF JAUNDICE

Surgical Department

A German widow sixty years old entered August 10 complaining of jaundice.

When she was nineteen she had an attack of jaundice with nausea and abdominal pain, not localized. She was in bed two weeks and out of work six weeks, with no severe pain or high temperature. When she was forty-two she had attacks of sharp right upper quadrant pain of sudden onset lasting three hours, accompanied by nausea, relieved by "injections." The attacks occurred at any time of day. After them there was tenderness for a week or two. She had four of these attacks in the next ten years. When she was fifty-two her husband died suddenly. She was ill with another attack, with jaundice for the first time since the attack in her girlhood. After this she felt very well until ten weeks before admission. Then she lost appetite, especially for meat. When starting to eat breakfast she felt weak, with fullness in the epigastrium relieved by soda, milk and belching of gas. Six weeks before admission she noticed that her chest was yellow. The color had now spread to her face and arms and had grown more intense. She was in bed two weeks. For six weeks she had had difficult and painful micturition. For five weeks she had had edema of both legs. Four weeks before admission she began to vomit, at times coffee ground material, but usually greenish, not bloody. The vomiting occurred especially on standing up. There was pain in the right lower quadrant, relieved by moving the bowels. Her appetite was poor in the morning, fair in the afternoon. The stools were loose yellow and clay colored. The belching of gas and passage of gas had increased. Ten days before admission her hemorrhoids came outside and were replaced with great difficulty. She was more dyspneic than usual. Two days before admission she had a real chill. For two days her urine had been reddish brown.

Her mother died of "dropsy," one sister and a daughter of heart trouble. The patient had had one child stillborn.

She had had no diseases. She had always slept poorly. As a child she often had nosebleeds. The winter before admission she had one severe nosebleed requiring an ice pack.

Examination showed a well nourished woman with deeply jaundiced skin and sclerae. The teeth were all false. The heart and lungs were normal. There was tenderness in the left lower quadrant. Pelvic examination showed a lacerated perineum, cystocele and rectocele; no other abnormalities. Rectal examination showed the sphincter lax, several inflamed hemorrhoids. There was slight pitting edema of both ankles. The amount of urine is not recorded, specific gravity 1.010 to 1.020, red at one of four examinations, a very slight trace to the slightest possible trace of albumin at four of five, bile at all of five sediment examinations, occasional leucocytes at two, occasional red cells at one. The blood is not recorded, except leucocytes 9,000 to 10,000, hemoglobin 85 per cent., 3,200,000 reds. A Wassermann was negative. Icterus index 90. Bleeding time 5 minutes, clotting time 8½ minutes. Van den Bergh immediate reaction was positive. The stool showed bile. X-ray showed no evidence of organic disease of the stomach or duodenum. The stomach emptied very rapidly.

Dr. Chester M. Jones in giving his diagnosis said, "I am unable to explain the left lower quadrant pain and tenderness."

The patient was given 10 cubic centimeters of 6 per cent. calcium chloride at 10 a.m. and 9 p.m. August 15.

August 16 operation was done. She made a good ether recovery and was comfortable two days later. The drainage was not excessive. The morning of August 19 the temperature began to rise. There was profuse drainage of bile stained serum from the wound. The patient vomited a great deal that day and in the evening looked very ill. She failed rapidly during the night. The morning of August 20 there were many coarse bubbling râles throughout both lungs.

The temperature, which was 101° the evening before dropped to normal, but the pulse rose to 110. That noon she died.

DISCUSSION

BY ERNEST M. DALAND, M.D.

We notice that this woman complained of jaundice; she did not complain of pain.

That attack at nineteen was apparently an infectious jaundice, which probably had nothing to do with the present condition.

Apparently these attacks of pain were due to gall-stones.

I do not know that "especially for meat" means anything. It does not to me.

This is a rather peculiar story, that she had this epigastric distress at the time of eating, but it was relieved by milk.

From her history we have a woman who apparently had an infectious jaundice as a girl, who had had numerous attacks of right upper quadrant pain sufficient to require injections, probably morphia. She had had jaundice once before during one of the attacks. The present attack had been going on for six weeks, beginning with jaundice. There is not much said about pain along with this jaundice. She had some gastric upset, a certain amount of epigastric distress.

I cannot connect up the urinary symptoms with the rest of the story from anything I have heard so far.

Apparently these hemorrhoids were not due to anything higher up, because rectal examination was negative. The fact that she had had these hemorrhoids come out and that they had been replaced with difficulty, the fact that she had edema of the ankles, would point to some backing up of the circulation in the lower part of the abdomen.

She has a slight secondary anemia.

The icterus index is very high. This examination all points towards an obstructive jaundice rather than a hemolytic jaundice.

DR. JOHN D. CAMP: These films show no definite change that is significant. There is a deformity in the first portion of the duodenum, which if we were to rely altogether on the films I think we should say was an ulcer. This was supplemented by fluoroscopic examination; and the deformity present on the films was probably not constant, as we have this negative report. That illustrates why we should not rely on X-ray films alone.

DR. CABOT: Would that make you think of anything outside the duodenum?

DR. CAMP: I do not see anything here to suggest it. There is no note about its being displaced. Occasionally in disease of the pancreas, particularly in carcinoma of the head of the pancreas, the loop becomes unusually large. It is widened out. And sometimes we have delay in the midportion of the third part of the duodenum which helps us to make the diagnosis of pancreatic disease. But there is apparently nothing to suggest that in this case.

DR. DALAND: This woman had obviously had gall-bladder disease in previous years, and I think that the most likely diagnosis in view of that is that she had a stone in the common duct. She did not complain of much pain during the six weeks that she had this jaundice. I think patients are pretty apt to have pain at the time the stone goes down into the common duct.

The other possibilities are a carcinoma of the gall-bladder or a malignancy of the head of the pancreas.

The patient had a chill two days before she came. That might indicate some reaction in the liver such as would be given with a cholangitis. She had a normal white count, so that it is not apparent that she had any severe gall-bladder infection.

I think probably she had stone in the common duct. I doubt very much that she would have been explored so quickly if they had thought they were going to find malignancy.

DR. DALAND'S PRE-OPERATIVE DIAGNOSIS

Stone in the common duct.

PRE-OPERATIVE DIAGNOSIS

Stone in common duct.

OPERATION

Gas-ether. A seven inch incision over the gall-bladder. The gall-bladder was distended and slightly thickened, but contained no stones. The stomach was normal. The kidneys and spleen felt normal. There was a definite hard swelling of the head of the pancreas, and the body and tail of the pancreas were also slightly swollen. No stones were felt in the common duct. "The diagnosis is obviously carcinoma of the head of the pancreas." A cholecystogastrostomy was done in the same method as a gastroenterostomy, using two posterior and three anterior layers of number 0 continuous catgut. One cigarette wick.

FURTHER DISCUSSION

This does not say whether or not the common duct was explored. Apparently it was not. Apparently the only drainage was through a cigarette wick.

She probably had a bronchopneumonia.

A PHYSICIAN: From the fact that the rest of the pancreas was also involved might it not be some form of pancreatitis rather than carcinoma of the pancreas?

Dr. Daland: That has occurred to me. I think it is unusual to have the entire pancreas involved without history and without symptoms, and without getting distortions by X-ray.

Dr. Cabot: Wouldn't the secondary anemia be against the diagnosis of stone in the common duct?

Dr. Daland: Yes, I suppose it would.

Dr. Cabot: It would rather tend to throw one over towards neoplasm.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the pancreas.
Peritonitis?
Cholecystgastrostomy.

DR. ERNEST M. DALAND'S DIAGNOSIS

(1) Stone in the common duct.
(2) Carcinoma of the pancreas?

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Red atrophy of the liver.

2. *Secondary or terminal lesions*

Icterus.
Hemorrhage into lung tissue involving a large portion of each lung.
Hemorrhagic edema of the lungs.
Slight arteriosclerosis.

3. *Historical landmarks*

Slight chronic pleuritis, right.
Obsolete tuberculosis of a bronchial gland.
Operation wound.

Dr. Richardson: There was a well-marked general icterus. In the peritoneal cavity there was a small amount of thin bloody fluid, but no peritonitis. The appendix was negative. The esophagus was negative.

The gall-bladder was securely united with the stomach at a point about four centimeters above the pylorus. The part was in good condition, and the opening between the gall-bladder and the stomach was patent. The gall-bladder itself contained but little bile. The mucosa was smooth and the bile-ducts were free and negative. The intestines showed moderate congestion.

The pancreas macroscopically showed no definite lesions. There was no deformity and grossly there was no evidence of new growth. Microscopically the organ was negative.

The spleen weighed 170 grams; the tissue was dark brown red, elastic, congested. The adrenals, kidneys, uterus and adnexa were negative.

Head. The meninges and vessels of Willis, the middle ears, pineal and pituitary glands were negative, and the brain, which weighed 1434 grams, showed no lesions.

The trachea and bronchi contained much bloody, frothy fluid. The apices of the lungs were negative. There were no areas of consolidation, but the tissue of each lung over large areas was dark to blackish red and markedly infiltrated with blood. Large areas then of the lung tissue showed hemorrhage. The remaining portion of the lung tissue showed hemorrhagic edema. Hemorrhage of the lung, presumably associated with the icterus.

The heart was negative. The aorta and great branches showed a very moderate amount of fibrous sclerosis.

The liver weighed only 760 grams. That is pretty small for a liver—about half size. It was fairly symmetrical. There were a few adhesions between the upper part of the right lobe and the diaphragm, these somewhat vascular. The surface generally finely to coarsely granular with areas where it was fairly smooth. The tissue generally was leathery and was bile stained. The section surfaces were generally granular, with areas where they were dark reddish, fairly smooth and rather elastic. The anterior margin of the liver was rounded and finely to coarsely granular. And there we have a mixed picture, in some places resembling cirrhosis and in others a late stage of a toxic or infectious hepatitis. There was something in the history of that, wasn't there?

Dr. Daland: Yes; as a girl of nineteen she had an attack of jaundice without pain.

Dr. Richardson: Macroscopically it certainly suggested that it might be a late stage of toxic or infectious hepatitis and microscopically it was considered to belong to the so-called yellow atrophy group, late stage.

Dr. Daland: You found nothing in the common duct?

Dr. Richardson: Nothing.

Dr. Cabot: What reduced the size of the liver so much?

Dr. Richardson: The chronic toxic hepatitis.

Dr. Cabot: So most of it was cirrhosis with something else on top of it?

Dr. Richardson: The fibrosis was slight and the change in size due mostly to the underlying condition of so-called yellow atrophy.

Dr. Cabot: There is no organ of the body in which I have seen such frequent disagreements between surgeons and pathologists as the pancreas. We are always hearing the surgeon found this or that in the pancreas, and when we come to necropsy Dr. Richardson refuses to find it.

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THE TEACHING OF MEDICINE

Medical Science has advanced so rapidly within the last quarter century that medical teaching has been completely revolutionized. As new scientific facts were acquired they were added to the curriculum. Medical courses were lengthened. It soon became apparent that no individual can grasp all the facts of scientific interest and that some facts were not especially important in the daily routine of practice. The attempt to teach everything has been abandoned.

As a thorough preliminary training was necessary to understand many of the underlying principles and new methods, medical schools began to require an academic degree as a condition for admission. This requirement has, however, in many instances been modified to two years in college with high standing. Some extremists go much further and contend, most illogically we believe, that a high school education is sufficient.

As much of the advance in medical science was along the lines of physics, chemistry and biology, candidates for admission have been and are required to concentrate on these studies during their college course.

As the advances in these branches went on medical schools were forced to add many laboratory teachers who devoted their entire attention to their special work and had little to do with individual sick patients. There is increasing recognition of the need of closer contact between the laboratory worker and the patient.

Laboratory work has in some instances seemed to be more accurate than clinical investigation and as such appealed more to ambitious students. It is now quite generally realized that laboratory data must be interpreted in the light of clinical facts.

The rapid acquisition of knowledge stimulated the thirst for more knowledge. Research became the watchword. Advancement to teaching positions in medical schools seemed in certain instances to depend upon research and the stimulation of research among students. Some authorities are becoming cognizant of the fact that a vast amount of the money expended on research has not and will not prove of practical value.

It is a fact that in the past and up to the present moment many of the greatest discoveries have been made by clinicians not specially trained in laboratory research. The original name of "Salvarsan, 606" indicates a discovery by a laboratory worker who undertook to solve a problem by repeated experiment. Insulin is the result of the brilliant inspiration of a clinician.

The fact that great discoveries are made in these two ways illustrates the futility of men attempting to train all to become research laboratory workers. Nevertheless, in certain schools every student is required to undertake a problem in research. This is done in spite of the fact that regular courses of instruction are often thought to be too elaborate already.

The addition of extensive laboratory instruction and the addition of workers in research to medical faculties has enormously increased the expenses of maintaining medical schools. The tuition fees in the best medical schools do not now begin to meet running expenses as they formerly did. Yet there has never been any very definite attempt to differentiate the expenses of instruction from the expenses of investigation. The fact that many schools not heavily endowed continue to give good instruction but are unable to undertake extensive research indicates that the added costs in our medical schools may be due largely to research and not to didactic and clinical instruction.

Selected schools have been enormously aided in research by contributions from great foundations. The schools in which research has taken such a prominent place have been compelled to limit the number of students admitted because the expense of training them is so great. In general, the schools selected for financial assistance have been the strongest. The influence upon the weaker schools has been great. In New England, Dartmouth no longer gives a full course; Bowdoin has ceased to exist. Harvard, Yale, Tufts and Boston University limit the number of their students.

The cost in time and money involved in securing a medical education has increased tremendously. The laboratory, as distinct from the clinic, is the chief factor in the increase. The emphasis placed upon the laboratory and upon research appears to deter many a student from settling in smaller communities, even though the opportunities may otherwise be alluring.

There are those who question the wisdom of attempting to make all students undertake research. This does not mean, however, that all students should not be compelled to think. There are those who feel that the power to think is not fostered by too rigid or too prolonged courses of medical and pre-medical studies. Is it not barely possible that a study of logic, of economics, of history, or even of art might aid in creating a great physician as well as the prolonged study of biology, physics and chemistry?

There are those who question the possibility of there being any group of men wise enough to set arbitrary limits to the number of students admitted to medical schools, save in brief periods to meet what may be temporary conditions.

Should not the public know the reasons for the greatly increased costs of medical education?

Research must go on. It is essential to the public welfare as well as to the welfare of all high grade medical schools. But all students are not fitted for research, and all do not desire to undertake it. The needs of the Commonwealth and of New England are for broad minded, clear thinking, able physicians. There is a widespread feeling in the medical profession and among the public that our great medical schools may not fully realize the demands of the times. It is fully agreed that research must go on but there should be the guiding understanding that its object is to aid the clinician not only in the cure but in the prevention of disease. Adequate training of a sufficient number of physicians by more doctors well grounded in the fundamental principles of practice and trained in the art of reasonably simple methods is the most important feature of medical education in this stage of human existence. The immediate need is for diagnosis.

The person whose talents will find expression through research will not be diverted from this field, but those who desire to practice medicine in order to immediately serve humanity should be allowed to pursue that path which brings them in contact with the people as early as possible and should not have the enthusiasm of youth dulled by rigid restrictions in the curriculum of medical schools.

The human race makes haste slowly and vital needs are often tardy of recognition but as is sometimes said in political matters, eventually right prevails. So it will be with medical education which is now in a transition period.

CLINICAL LABORATORIES

With the emphasis laid at the present time on various laboratory methods and procedures it is not surprising that many clinical laboratories have come into existence within the past ten years. In 1924, the Council on Medical Education and Hospitals of the American Medical Association, in conjunction with the American Chemical Society and the American Association of Pathologists and Bacteriologists, undertook an investigation of such laboratories relative to securing responsible and proper supervision and adequate equipment and facilities.

This joint Committee sent out questionnaires to 1403 laboratories and 1080 replies were received. Only 618 carried out clinical work for physicians and the 314 complete reports received from this group were made the basis of their report and recommendations. An idea of the importance of such laboratories may be gained from the fact that these 314 laboratories carry out over 2,000,000 tests annually. There can be no doubt but that certain laboratories are lacking in proper supervision and adequate equipment. In an effort to promote high standards, the Council on Medical Education and Hospitals has recently published a schedule containing the various essentials of a properly conducted clinical laboratory. Laboratories complying with these recommendations are approved by the Council and in all 137 such laboratories are listed. Such supervision seems highly desirable and should eventually lead to more efficient and accurate work in this rapidly expanding branch of medicine.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Sever, James Warren, M.D. Harvard Medical School 1901; F.A.C.S.; Associate Surgeon Children's Hospital, Boston, Instructor in Orthopedic Surgery, Harvard Medical School; Member American Orthopedic Association. His subject is "Physiotherapy, Its Use by the General Practitioner." Page 1099. Address: 321 Dartmouth Street, Boston.

Bowditch, Vincent Y., A.B., M.D. Harvard Medical School 1879; Consulting Physician Boston City Hospital; Medical Director, Sharon Sanatorium; Member National Tuberculosis Association; President Trustees of Central New England Sanatorium and Industrial Colony at

Rutland; Ex-President American Sanatorium Association. The title of his paper is "Remarks of the Honorary Chairman of the Clinical Section of the National Tuberculosis Association at Washington, D. C., October 4, 1926." Page 1104. Address: 506 Beacon Street, Boston.

KIERNAN, FRANK, A.B. Executive Secretary Massachusetts Tuberculosis League. He writes on "The Fundamentals in Tuberculosis Work as Understood By Volunteer Organizations." Page 1106. Address: 1149 Little Building, Boston, Mass.

RICHARDS, LYMAN, A.B., M.D. Harvard Medical School. Surgeon in Otolaryngology, Children's Hospital, Boston; Associate in Otolaryngology, Peter Bent Brigham Hospital; Associate Staff Deaconess Hospital. His subject is "Foreign Body Complications of Lye Stricture of the Esophagus." Page 1108. Address: 270 Commonwealth Avenue, Boston.

STILES, PERCY G., S.B., Ph.D. Johns Hopkins University 1902. Assistant Professor of Physiology, Harvard University; Member American Physiological Society and Society for Experimental Biology and Medicine. His subject is "Progress in Physiology." Page 1109. Address: Harvard Medical School, Boston, Mass.

MISCELLANY

BIRTH CONTROL

THE New York League of Women Voters at the annual meeting held December 2 inst., endorsed the movement to secure legislation designed to permit physicians to give contraceptive prescriptions to married women.

The vote stood 53 to 42.

The present law in that state makes it a crime for persons to give birth control treatment or information to any one except married women suffering from illness or disease.

Miss Dorothy Kenyon presented the proposal contending that information relating to this matter would diminish poverty and disease among certain classes. Others argued that dissemination of this information would tend to diminish crime.

A heated struggle is predicted.

MEDICAL COLLEGE TO SEEK $1,500,000

BECAUSE of the growing demand for women physicians in this country and in the foreign medical field, the Woman's Medical College of Pennsylvania, the only college in the United States exclusively for the training of women physicians, is planning to expand its equipment to take care of 200 students, double the number now enrolled, according to an announcement made recently by Mrs. James Starr, President of the college, to friends, alumnae and the Faculty. As a first step $1,500,000 will be sought from alumnae and friends everywhere of medical education for women.

The college, when founded seventy-six years ago, faced a storm of outraged public opinion, and the ambitious women who became students were insulted and even mobbed on the streets. Since then more than 1,600 graduates have followed their profession all over the world. The college has drawn a great many students from foreign lands.—*N. Y. Times.*

SUPER-EDUCATION OF NURSES

ONE thousand copies of the 1926 List of Schools of Nursing Accredited by the State Boards of Nurse Examiners are just off the press. Orders may be sent to Headquarters of the American Nurses Association, 370 7th Ave., N. Y. City. The price has been placed at $1.50 to cover the cost of printing.

PREVALENCE OF SMALLPOX

IT is reported from the health section of the League of Nations that smallpox was more prevalent in the United States during the first quarter of 1926 than in any other nation of the world excepting India. Twenty seven states of the United States reported 7631 cases during the first three months of this year. With the exception of India, England and Wales came nearer to the United States than any other country.

Why: Because physicians do not present the facts to the people individually. Any doctor, if tactful, can induce a large proportion of his patients to accept vaccination.

DR. PEABODY HONORED

ELECTED TO BOARD OF SCIENTIFIC DIRECTORS OF ROCKEFELLER INSTITUTE

THE election of Dr. Francis Weld Peabody of Boston as a member of the Board of Scientific Directors of the Rockefeller Institute for Medical Research, was announced Nov. 22 through The Associated Press.

Dr. Peabody is Professor of Medicine in the Harvard Medical School and Director of the Thorndike Memorial Laboratory of Boston City Hospital. He is a graduate of Harvard College, 1903, and Harvard Medical School, 1907, and for a year was a Fellow of Johns Hopkins Medical School. He is a trustee of the China Medical Board of the Rockefeller Foundation, and a member of a number of medical societies.—*N. Y. Times.*

TUBERCULOSIS ITEMS

Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League, received from the United States Census Bureau a report on the mortality from the leading causes of death in Massachusetts in 1925. The Government figures show that tuberculosis last year was responsible for the death of 3,441 people in Massachusetts. "According to the standard of the National Tuberculosis Association, which computes nine living cases to each death, there are, doubtless, not less than 30,000 persons in the Commonwealth suffering from tuberculosis," said Mr. Kiernan. "The majority of these people are in the productive ages between fifteen and forty. For the most part, these deaths are preventable."

Mr. Kiernan recently returned from a tour of the state made in the interests of the 1926 Christmas Seal Sale. His journey took him to Barnstable, Plymouth, Bristol, Essex, Middlesex, Northern Worcester, Southern Worcester, Hampden, Hampshire, Franklin and Berkshire Counties.

In a number of counties the local volunteer associations have induced the public authorities to assist in the work of the summer health camps. In Hampshire County the County Commissioners have set aside a large acreage near the County Tuberculosis Hospital and have begun building operations to provide for a summer health camp which will open in June, 1927, under the auspices of the Hampshire County Public Health Association to care for fifty children. In Bristol County the County Commissioners have enlarged the health camp so that it will provide for additional underweight children next year. A similar extension is in contemplation by the authorities in Barnstable County. Extensions of camp facilities and other provisions for under-nourished children have been made by the local associations in Middlesex, Northern Worcester, Berkshire and Hampden Counties.

PHYSICIANS TO BUILD NEW HOSPITAL IN NEW YORK CITY

One hundred and fifty physicians and surgeons of New York are planning to build a $4,000,000 hospital, with hotel accommodations for the relatives of patients, in East End Avenue, between Eighty-seventh and Eighty-eighth Streets, overlooking the East River.

Guion H. Fountain, a former official of the National City Bank, who will be President of the new institution, which may be called "The Doctors' Hospital," said that the associated physicians and surgeons have been working on the project for more than three years in an effort to supplement the present inadequate hospital facilities for private patients, and that, through the subscriptions of friends in other professions and in business, approximately $1,000,000 has been subscribed toward $1,750,000, which, with mortgage loans, would be required to build up and equip the hospital.

NOT A CHARITABLE MOVE

"The proposition is not a charitable movement or a hospital 'drive.' The whole thing grew out of conditions that are rapidly becoming more and more involved. It isn't in any sense competitive; instead, it is merely supplementary to the hospital situation in this city. No provision is made for the care of the sick in apartment houses in which New York lives today. Sickness puts a tremendous strain on the machinery of the metropolitan household, not to mention the dangerous discomfort inflicted upon the patient.

Dr. Alexander Lambert, it was said, organized the physicians and surgeons, who include Malcolm Goodridge, Adrian V. S. Lambert, John M. Wheeler, Arthur B. Duel, J. Bentley Squier, Foster Kennedy, H. McM. Painter, Ludwig Kast, Henry James, H. Rowle Geyelin, William L. Sneed and Wilbur Ward, each of whom will be a Chairman of a standing committee.

Some of the other doctors interested are Joseph A. Blake, John F. Erdmann, James Alexander Miller, Margaret Stanley-Brown, Frederick Tilney, Anna I. Von Sholly and Edwin G. Zabriskie.

Willard D. Rockefeller, former superintendent of the Albany Hospital and of the Imperial Hotel, will be managing director of the hospital. The executive officers of the Medical Board will be Dr. Alexander Lambert, President; James Alexander Miller, Vice-President, and Joseph S. Wheelwright, Secretary.

Other members of the Organization Committee, in addition to the doctors, from whom will be chosen the Board of Control, are Frederick W. Allen of Lee, Higginson & Co., Philip G. Bartlett of Simpson, Thatcher & Bartlett, William Henry Farnum of William Henry Farnum & Co., John McEntee Bowman, Matthew C. Brush, Coleman du Pont, J. Newton Gunn, Charles Hayden, Percy A. Rockefeller and J. Stanley-Brown.—*N. Y. Times.*

CHRISTMAS SEAL SALE

Seven tons of Christmas Seals were released in the Commonwealth by the twenty-seven organizations of the Massachusetts Tuberculosis League for the opening of the 19th Annual Seal Sale.

Official figures, just received by the League from the U. S. Census Bureau, indicate that in 1925 three thousand, four hundred and forty-one persons in Massachusetts died of tuberculosis. According to the official computation of the National Tuberculosis Association this would indicate that there are 31,000 persons in the Commonwealth now afflicted with this disease. The State and local tuberculosis committees supplement the work of the public health departments in carrying on a campaign for the prevention of tuberculosis.

Since the tuberculosis campaign was inaugurated nineteen years ago the number of deaths annually have been reduced by more than one-half. It is the objective of the tuberculosis workers to bring about in the course of a few years through the funds derived from the sale of Christmas Seals the complete extermination of the disease.

The opening of the 1926 Seal Sale was formally made by Bill Bartlett of Montpelier, Vermont, a former musical director of New York theatres and now a health evangelist, who held a mass meeting of his Keep Well Club on Boston Common. Twenty thousand boys and girls from Metropolitan Boston gathered round the band stand and heard Bill play his famous fiddle and tell the story of how he regained his health by living on a mountain top in Vermont. Bartlett was taken from New York to Montpelier three years ago to die. By open-air treatment and exposure to the sun, he has completely regained his health and is devoting the rest of his life to preaching the gospel of good health through open-air living. He has been in Boston speaking to groups of school children and clubs under the auspices of the Boston Tuberculosis Association.

SPECIAL COURSE FOR PHYSICIANS IN TREATMENT OF VENEREAL DISEASE

Surgeon General Hugh S. Cumming has announced that the U. S. Public Health Service, as a part of its coöperative work with State health departments in the control of venereal diseases, will give special courses of training to physicians, clinicians, and health officers at its venereal disease clinic, Hot Springs, Arkansas.

This clinic, which is operated by the Public Health Service in a new building belonging to the Department of Interior, offers exceptional opportunities for the study of the venereal diseases, especially in clinical and laboratory diagnosis, treatment methods, and clinic management. Here, studies of the many practical and scientific problems connected with venereal disease control are carried on. Last year 3,570 indigent persons were examined at the clinic; 3,064 cases of syphilis and gonorrhea were diagnosed and given a total of 32,315 treatments.

Surgeon General Cumming states that the instruction courses which now are offered will consist of a series of lectures by the Director and the Consulting Specialists attached to the clinic, demonstrations in laboratory and treatment methods, and practical experience in the diagnosis and treatment of syphilis and gonorrhea in various stages through participation in the routine work of the clinic. New classes of not more than ten physicians will form on the first of each month and the course will continue for a minimum of thirty days. Engraved certificates will be presented by the Public Health Service to those who satisfactorily complete the thirty-day course.

Fees are not charged for this course of instruction. The individual physician, however, will necessarily provide his own travel expense to and from Hot Springs and his living expenses while there.

Interested physicians should write to the local State health officer or to the Surgeon General, U. S. Public Health Service, Washington, D. C., for information or application blanks. Applications should be indorsed by the State health department in which the applicant resides before being submitted to the U. S. Public Health Service.

RECENT DEATHS

POWERS—Dr. Edward Joseph Powers, a practicing physician of Chelsea, died at his home while listening to the radio, November 25, 1926, at the age of 60.

Born in East Boston, he was a graduate of Holy Cross College and of Harvard Medical School in the class of 1892. He was a member of the staff of Chelsea Memorial Hospital, was medical inspector of the Chelsea schools, and a Knight of Columbus.

He is survived by his widow, who is Mrs. Beryl Powers, and by one sister.

O'SHEA—Dr. Edwin Flavin O'Shea, a graduate of Harvard Medical School in the class of 1890, and a practitioner of Brighton, died at his home there, November 23, 1926, aged 62.

CORRESPONDENCE

A DEFENSE OF THE TREATMENT OF ABORTION

Editor, Boston Medical and Surgical Journal:

Will you please publish the following corrections in the Boston Medical and Surgical Journal at your earliest convenience?

Dr. John Rock, writing on the subject of "Miscarriage: Its Causes, Diagnosis and Treatment," in the Boston Medical and Surgical Journal of October 28, 1926, makes several references to our article, "The Treatment of Abortion," published in *Surgery, Gynecology and Obstetrics* of January, 1925. In his article he quotes our mortality rate as 2.2 per cent.; he fails to mention the fact that 15 of the total 26 deaths in this series were due to the disease causing the abortion as plainly shown by us under Table XI, page 90, and caused by such conditions as toxaemia of pregnancy in 7, and lobar pneumonia, septic endocarditis, general tuberculosis, typhoid, pyonephrosis, amebic abscess of the liver, malaria, and pyosalpinx with fibroid in one each. It would seem unfair to charge these deaths to abortion, it being merely "an adjunct to something worse." In our article, Table X page 91, shows the corrected mortality rate due directly to abortion as .9 per cent.

Dr. Rock also refers to Gordon's series at Bellevue, stating that in his (Gordon's) 193 cases "which are all with a temperature above 100° by mouth," the mortality rate was only 6.2 per cent. Had he classified our cases in similar manner he would have found 276 with temperature 100° or over and 11 deaths, a mortality rate of 2.9 per cent. We state on page 89, our article: "Cases with high intermittent fever and chills, rapid pulse, tender uterus and lower abdomen, with or without foul vaginal discharge, are recognized as septic abortions." We are not ready to assume that all cases with temperature over 100° are necessarily septic.

We are accused of having a tremendous mortality in these septic cases. Our records show 79 cases thus classified, 65 being incomplete on admission and 14 complete. Of the incomplete cases 63 were operated upon, with 10 deaths. Three of these fatal cases were accompanied with 4 plus hemorrhage (page 88, our article), thus forcing our hand. Omitting these 3 from total cases and deaths, the mortality rate for this group becomes 11.6 per cent. The operative procedure in these cases was sufficient dilatation, if necessary, to admit ovum forceps, and careful removal of visible necrotic secundines remaining in the uterus. Two incomplete cases were not operated upon; one of these died, a mortality rate of 50 per cent.

Of the 14 cases classed as complete on admission, one was operated upon by the abdominal route following a preliminary D and C, for tubal infection, and died on the eighth postoperative day with symptoms suggesting acute intestinal obstruction but not verified, as no postmortem was allowed. It is readily understood why most of these cases of complete septic abortion recovered; the focus of infection had been evacuated spontaneously relatively early in the disease.

In view of the fact that our corrected mortality rate for 1164 cases was .9 per cent., figures below any quoted by Dr. Rock with the exception of his own 113 cases, a series clearly too small for comparison; a mortality rate of 2.9 per cent. for all febrile cases; and a corrected mortality rate of 11.6 per cent. for those septic cases desperately ill on admission, we cannot but feel that our results substantiate the wisdom of our treatment, be it classed as radical or not.

Howard K. Tuttle, M.D., F.A.C.S.

Ancon Hospital, Ancon, Canal Zone.

November 16, 1926.

UNITED STATES PUBLIC HEALTH SERVICE

Chronological List of Changes of Duties and Stations of Commissioned and Other Officers of the United States Public Health Service, November 17, 1926

Surgeon G. W. McCoy. Directed to proceed from Washington, D. C., to New York City, November 10, and return, in connection with studies of pneumonia and influenza. November 9, 1926.

Surgeon F. A. Carmelia. Directed to proceed from Washington, D. C., to Milford, Del., and Marcus Hook, Pa., November 15, and return, in connection with the acceptance and delivery of a tug. November 10, 1926.

Surgeon B. S. Warren. Directed to proceed from Baltimore, Md., to Philadelphia, Pa., and return, to investigate a claim against the United States Employees' Compensation Commission. (No expense to Service involved.) November 10, 1926.

Assistant Surgeon General Thomas Parran, Jr. Directed to proceed from Washington, D. C., to Philadelphia, Pa., November 12, and return, for conference with public health authorities concerning the control of venereal diseases. November 12, 1926.

Surgeon J. S. Boggess. Directed to proceed from Detroit, Mich., to Battle Creek, Mich., November 17, and return, for conference with local health officers and others relative to the treatment of Service beneficiaries. November 12, 1926.

Sanitary Engineer L. C. Frank. Directed to proceed from Montgomery, Ala., to Atlanta, Ga., and return, to attend a meeting of the Southern Medical Association to be held November 15. November 12, 1926.

Surgeon Robert Olesen. Directed to proceed from Cincinnati, Ohio, to Nashville, Tenn., and return, in connection with goiter investigations. November 13, 1926.

Surgeon H. J. Warner. Directed to proceed from Albuquerque, N. M., to Fort Bayard, N. M., and return, to investigate a claim against the United States Employees' Compensation Commission. (No expense to Service involved.) November 13, 1926.

Mrs. Watler McNab Miller, Special Consultant. Directed to proceed from New York City to Boston and such other points in the State of Massachusetts as may be necessary, and return, to coöperate with the State Department of Public Health in the control of venereal diseases. November 13, 1926.

Chief Pharmacist R. D. Kinsey. Directed to proceed from Washington, D. C., November 15, to Long Island City, N. Y., via Perry Point, Md., and return, to inspect surplus supplies. November 13, 1926.

Surgeon R. E. Dyer. Directed to proceed from Washington, D. C., to Alexandria and other places in Arlington County and Fairfax County, Va., and return, in connection with studies of scarlet fever. November 15, 1926.

Surgeon P. D. Mossman. Directed to proceed from Rolla, Mo., to New York City, via Washington, D. C., December 1, and return, in connection with the prevention of the spread of trachoma. November 15, 1926.

BOARD CONVENED

A board of officers convened to meet at Seattle, Wash., December 1, 1926, for the purpose of examining certain Coast Guard officers to determine their physical eligibility for promotion. November 9, 1926. Detail for the board: Senior Surgeon G. M. Magruder, Surgeon Carl Michel.

PROMOTION

John McMullen promoted and commissioned in the grade of senior surgeon, effective November 23, 1926.

C. C. Pierce, *Acting Surgeon General.*

Chesterfield, Mass., November 18, 1926.

Editor, Boston Medical and Surgical Journal:

The town of Chesterfield is trying to secure a physician to locate in the town. The population of the town is about 450 in the winter, and in the summer is increased by a hundred or more. We are 14 miles from Northampton, Mass., where there is a hospital of good standing called the Dickinson Hospital. We are surrounded by the towns of Huntington, 14 miles; Worthington, 6 miles; Goshen, 5 miles; Cummington, 6 miles; Westhampton, 6 miles, and Williamsburg, 6 miles. There is a doctor in each of these towns except Goshen and Westhampton. The town will pay $600 per year to a resident physician and there is a house which he can occupy rent free.

Sincerely yours,

W. H. Baker.

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING NOVEMBER 27, 1926

Diphtheria	25	Bronchopneumonia	20
Last week	34	Chickenpox	111
Diphtheria bacilli carriers	9	German measles	1
		Influenza	2
Scarlet fever	44	Mumps	4
Last week	54	Pneumonia, lobar	25
Typhoid fever	1	Septic sore throat	1
Last week	2	Tuberculosis, pulmonary	37
Measles	32		
Last week	10	Gonorrhea	15
Whooping cough	52	Syphilis	9
Last week	35		

NEWS ITEMS

HARVARD MEDICAL NEWS—At a meeting of the Faculty of Medicine held in the Faculty Room of the Medical School on November 5, 1926, the following apointments were recommended, and have since been authorized:

Reappointment with Change of Title—One year from September 1, 1926: Maurice Fremont-Smith, M.D., Instructor in Medicine, from Assistant in Medicine.

Reappointment—One year from September 1, 1926: William Bosworth Castle, M.D., Assistant in Medicine.

New Appointments—One year from September 1, 1926: George Albert Elliott, M.B., Assistant in Psychiatry; Camille Jean van Caulaert, M.D., Research Fellow in Medicine; Joseph Csapo, M.D., Research Fellow in Pediatrics; Theodore George Harwood Drake, M.B., Research Fellow in Pediatrics; Theodore Stanley Wilder, M.D., Research Fellow in Pediatrics.

New Appointment—For nine months from December 1, 1926: Harry Blotner, M.D., Assistant in Medicine.

DOCTORS IN THE CAVALRY OF THE UNITED STATES ARMY WILL RIDE HORSES—The Department of War will require the doctors in the cavalry service to ride horses rather than in ambulances. This unit will be designated as the Medical Squadron Cavalry Division. By this arrangement doctors will be with the mounted forces, whereas formerly, attached to the ambulance division, they were not always on hand in emergencies.

COLUMBIA TO EXTEND MEDICAL SERVICE TO ITS STUDENTS AND STAFF—Columbia University will build a medical service building for the purpose of giving real medical examinations to its students and staff. Dr. William H. McCastline, who is in charge of this service, says that medical examinations should be carefully and scientifically given or not at all. He claims that harm is being done by careless routine examinations that are little more than casual inspections of body posture and taking a few measurements. The plan now being inaugurated comprises a carefully planned follow-up system which will provide for advice as to exercise, diet and rest.

Although the health of the student body is better than the average of the city it is expected that opportunities for intensive study and treatment exist with the expectation that still better conditions will be brought about.

THE MAYOR OF BOSTON WILL INSPECT THE BUFFALO SANATORIUM—Mayor Nichols, accompanied by Dr. Francis X. Mahony, Health Commissioner of Boston, went to Buffalo recently to inspect the Municipal Sanatorium at Perrysburg.

This trip was for the purpose of securing information with respect to the reorganization of the Boston Sanatorium at Mattapan.

Dr. Mahony has been appointed chairman of the trustees of the Boston Sanatorium.

WOMEN SCIENTISTS IN GOVERNMENT WORK—There are eighteen pathologists, twenty chemists, seven physicists, one zoologist, one bacteriologist and several others in Federal departments which have no contact with medicine.

THE SCHOOL OF MEDICINE OF TEMPLE UNIVERSITY—The Temple University Corporation has purchased a large plot of ground at the northwest corner of Broad and Ontario Streets, Philadelphia, opposite the Samaritan Hospital, for the erection of a new building for the School of Medicine of Temple University.

Announcement of the purchase of the site was made by Dr. Charles E. Beury, President of Temple University, at a special meeting of the board of trustees of the institution on Saturday night, October 30, 1926. The ground has a frontage of 196 feet on Broad Street and 100 feet on Ontario Street.

The ground was selected by the Temple University Corporation because of its proximity to the Samaritan Hospital, which, aside from being one of the largest hospitals in the city, is, of course, also a part of the School of Medicine of Temple University. The university corporation maintains a system of three hospitals—the Samaritan, Greatheart and Garretson.

Upon this site, Dr. Beury declared, Temple University proposes to erect a five-story structure as one of the initial objectives of the $20,000,000 campaign about to be undertaken under the auspices of the Russell H. Conwell Foundation, for the future development, further equipment and additional endowment of the institution. The new medical school, Dr. Beury estimated, would cost approximately $1,500,000, while its endowment would require an additional $2,000,000.

"The purchase of the ground and the proposed erection of a new School of Medicine," said Dr. Beury, in announcing the conclusion of negotiations for the purchase, "are in line with Temple's phenomenal growth and with our plans for its future development. It will bring additional prestige to a community already recognized as one of the leading medical centers of the world."

Decision to erect a new medical school, Dr. Beury pointed out, was necessitated by the utter inadequacy of, and lack of proper facilities and equipment in, the buildings in which the School of Medicine now is housed at Eighteenth and Buttonwood Streets, and by constantly increasing demands for the training of medical and surgical practitioners.

With the construction of the new building, and adequate endowment of the School of Medicine, he pointed out, Temple University will be well equipped to fill this acute need. It is a well known fact, he said, that in this age of specialization the "good, old-fashioned" practitioners are becoming scarce, and that there is a widespread demand for the filling of their ranks.

The new building, it was said, will be the "last word" in medical school construction, ample provision having been made in the plans for scientifically built laboratories, research and study rooms, amphitheatres and clinical chambers, while the equipment will be of the most modern type. Occupation of the new building, Dr. Beury said, would provide enlarged opportunities for carrying out a program of exhaustive medical and surgical research by faculty and students.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga and amounting to about $300, will be made on July 14, 1927, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published. The essay should represent an addition to the knowledge and understanding of the subject based either upon original or literary research. They must be typewritten, and in English acceptable for publication without necessity for editing by the committee. Any illustrations should be appropriate and correctly annotated with the text. Essays must be received by the secretary of the college on or before May 1, 1927.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1926 has been awarded to Dr. P. S. Pelouze and Dr. Frederick S. Schofield, Philadelphia, for the essay entitled "The Gamophage."

John H. Girvin, Secretary, 19 South Twenty-second Street, Philadelphia, Pa.

YALE ORGANIZES MENTAL HYGIENE WORK. Five-Year Program Begins in Fall Under Supervision of Dr. Arthur H. Ruggles—Easily the most important of Yale's departmental developments to go into effect with the opening of the autumn term will be the introduction of a mental hygiene program. Plans, as finally completed, call for the organization of three branches of work: First, the introduction of courses and lectures to the undergraduates; second, installation of methods for finding cases, especially in early or incipient cases among the students of nerve or mental strain; third, co-operation with the State Mental Hygiene Society in organizing and conducting clinics.

All three stress the preventive, as well as the curative or the institutional side of the perfectly balanced case-finding program. The work is an expansion of the health program of the university, which has led to the formation of a separate department of health, under Dr. C. A.-E. Winslow, and a school for nursing, under Miss Annie Goodrich, in addition to the medical school, which has been completely reorganized under Dean Milton Winternitz.

The program will be under the direct supervision of Dr. Arthur H. Ruggles, whose work in Providence has attracted national attention. Members of his advisory committee and staff have been announced as follows:

Dr. Floyd Thompson, clinical instructor in psychiatry; Dr. Clement C. Fry, assistant professor at Harvard, and Major Harry N. Kerns, formerly psychiatrist at West Point, and for the past year chief medical officer at the Backus Aviation Field.

Funds for the work consist of $50,000 from the Commonwealth Fund. As the officials wish to inaugurate a five-year program, the sum has been pledged annually for that term of years.

Instruction in mental hygiene will begin as soon as the fall term opens and the trained staff will then be at the disposal of the undergraduates.

President Angell recently said that the inability of American universities to give mental hygiene service has been distressing. He feels that Yale can do a great service in the fight which Connecticut is making.

During freshman year it is planned to have conferences of groups of fifteen students. The mental hygiene viewpoint will be presented, lectures will be given, also open to sophomores for the study of a broader concept of life, and of the university. Advanced courses will be open to juniors and seniors.—*New York Times.*

CONNECTICUT ECLECTICS CLAIM THAT MANY PHYSICIANS ARE NOT ENTITLED TO PRACTICE IN THAT STATE—An effort is being made by a group of eclectic physicians in Connecticut to secure mandamus action affecting the registration of about fifteen hundred doctors who have been registered in the period between July 1, 1918, and February 1, 1923.

These eclectics assert that not only those of the school whose licenses were challenged but also those registered in the period stated above did not conform to State requirements.

PENSIONS FOR NURSES—A gift of $50,000 by the Harmon Foundation toward the creation of a pension fund for registered nurses has been announced.

An account of this gift may be found in *The Survey.* It is estimated that there are 100,000 graduate nurses in the United States, of whom about 10,000 are occupying salaried positions. The pension plan provides for regular payments to a fund so that at 60 years of age a contributing nurse may retire with an annuity of a little over a thousand dollars a year.

THE MENACE OF RABIES—A conference of physicians and veterinarians will be called by Health Commissioner Harris of New York to devise ways to combat the prevalence of rabies. In addition to the dissemination of information with respect to rabies and the importance of early treatment whenever a person may be bitten by a dog known to be rabid or when the condition of the dog is unknown, it is proposed that all dogs should be made immune to rabies by the proper treatment. In order to bring about general immunity it has been suggested that before a dog can be licensed proof of immunity must be shown. This would be a great safeguard of advantage to the dog as well as to human beings.

DR. WILLIAM J. MAYO CONDEMNS SPIRITUAL SEANCE IN DARKENED ROOM—Dr. Mayo claims that when persons enter darkened rooms for the purpose of witnessing the spiritualistic manifestations he surrenders 95 per cent. of his intelligence and may become the victim of his impaired capacity to arrive at conclusions. This is an adroit way of saying that he has been deceived. Honest spirits ought not to be afraid of light. Darkness has often been used as a cloak to cover fraud.

NOTICES

NEW ENGLAND PEDIATRIC SOCIETY

The annual meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, December 10, 1926, at 8:15 P. M.

1. The report of the Council.
2. The Treasurer's report.
3. The following papers will be read:

Diseases of the Tongue met with in Throat Work among Children, Charles O. Day, M.D.

X-ray in Certain Respiratory Conditions in Childhood, Alexander S. MacMillan, M.D.

4. The election of officers.

Light refreshments will be served after the meeting.

John Lovett Morse, M.D., *President.*
Joseph Garland, M.D., *Secretary.*

REMOVAL OF DR. PARKER M. CORT

Massachusetts loses and Connecticut gains by the removal of Dr. Parker M. Cort to Hartford, Connecticut.

Dr. Parker M. Cort, who has practiced medicine in Springfield for the past 21 years, has accepted a position as associate medical director of the Aetna Life Insurance Company of Hartford, Connecticut. In addition to his regular practice Dr. Cort since 1915, except for the period of the war, has been plant physician to the A. G. Spalding Bros. Co., at Chicopee. He has also been a consultant in tuberculosis and an examiner for several of the large insurance companies.

Dr. Cort was graduated from the Harvard Medical School in the class of 1902. For three years after graduation he saw active hospital service in Boston and Utica, New York, following which he started practice in Springfield. During his long residence in that city he has made many friends both among professional men and laymen all of whom are sorry to lose from their midst one who has been prominent so long. He is a member of the Springfield Academy of Medicine, the Hampden District Medical Society and the Massachusetts Medical Society.

During the war Dr. Cort was in service 28 months, 14 of which were spent in France. Nearly all his term of service was as chief tuberculosis officer of the 76th Division at Divisional Headquarters with rank of major.

Upon his return from overseas Dr. Cort accepted the presidency of the Hampden County Tuberculosis and Public Health Association which office he will continue to hold until his successor is appointed. As president of the Hampden County Association Dr. Cort has made it one of the outstanding organizations of its kind in the country. Through his interest in anti-tuberculosis work he served also for three years as vice-president of the Massachusetts Tuberculosis League and he is at present a member of its executive committee, a member of its board of directors and chairman of its budget committee.

Dr. Cort has always been interested in welfare work and has given freely and willingly of his time whenever and wherever he could be of public service.

JUNIOR MEDICAL OFFICER, ASSISTANT MEDICAL OFFICER, ASSOCIATE MEDICAL OFFICER, MEDICAL OFFICER, SENIOR MEDICAL OFFICER

Applications Will Be Rated as Received at Washington, D. C., Until December 30, 1926

The United States Civil Service Commission announces open competitive examinations under the above titles for filling vacancies occurring in the Federal classified civil service throughout the United States, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

There is especial need for medical officers qualified in tuberculosis or neuropsychiatry.

Salary and Promotion—For positions in the Departmental Service, Washington, D. C., the entrance salaries are: Junior medical officer, $1,860 a year; assistant medical officer, $2,400 a year; associate medical officer, $3,000 a year; medical officer, $3,800 a year; and senior medical officer, $5,200 a year. After the probational period required by the civil service act and rules, advancement in pay, without material change in duties, may be made to higher rates within the pay range for the grade, up to a maximum of $2,400 a year for junior medical officer, $3,000 a year for assistant medical officer, $3,600 a year for associate medical officer, $5,000 a year for medical officer, and $6,000 a year for senior medical officer.

Indian Service—The entrance salary for physician in the Indian Service ranges from $1,860 to $2,400 a year (usually $1,860), with quarters, heat and light. Employees and members of their families have the privilege of boarding at the "club" (where one is established) at a cost of from $16 to $20 a month; children under 12 usually paying half rates. The government furnishes all drugs and equipment and means of transportation.

Public Health Service—The entrance salary for assistant medical officer, Public Health Service, is $2,400 to $3,000, and for associate medical officer is $3,000 to $3,600. Any person between the ages of 23 and 31 who has had at least one year's interneship in an approved hospital may subsequently take the examination prescribed by law for the regular corps. Persons between 32 and 40 years of age may take the examination for the regular corps after they have performed five years of creditable service under their appointment as assistant medical officer or associate medical officer, as the case may be. At least one year's experience subsequent to graduation is required.

Coast and Geodetic Survey—The entrance salary for surgeons in the Coast and Geodetic Survey is $2,100 a year with allowance for subsistence at $1.25 per diem. The number of surgeons in the Coast and Geodetic Survey actually employed and under pay at any time is six. Three of these are employed in Alaska and on the Pacific Coast and three in the Philippines. Officers serving in the Philippines are usually relieved at the end of two years. All surgeons are attached to vessels, and while their first duty is to conserve the health of the crew, it is expected that they will take part in the work of the Survey. Appointment will be confined to those who indicate willingness to accept service in any of the regions named, and who have had not less than one year's experience subsequent to graduation.

Panama Canal—The entrance salary for physician, Panama Canal Service, is $225 a month; promotion may be made in steps of $8.33 up to a maximum of $366.67 a month, and to higher rates for special positions. The salary begins on the date of sailing for the Isthmus. Employees are supplied bachelor quarters at a charge for rent, furniture, water, electric light, and janitor service at approximately $9 a month. Family quarters are supplied when available at a rental of $10 to $25 a month, according to class, and an additional charge is made for electric current, water and fuel, based on the cost of the service. Meals may be obtained at the Canal Zone restaurants on the Isthmus at about 50 cents each and upward. Vacancies in the Canal Zone hospitals are filled by the detail of officers of the Medical Corps of the Army; openings for civilian physicians, therefore, occur only in the service outside of the hospitals proper, and are few and infrequent. Applicants must have had at least one year's experience subsequent to graduation.

Veterans' Bureau, Field Service—Positions of physician and medical examiner for full-time duty. The entrance salary for assistant medical officer is $2,400 a year; for associate medical officer $3,300 a year, for medical officer $3,800 to $4,000 a year, and for senior medical officer $5,200 a year. After the completion of the probational period of six months required by the civil service act and rules, advancement in pay may be made without change in designation up to $2,400 a year for junior medical officer, up to $3,000 a year for assistant medical officer, up to $3,900 a year for associate medical officer, up to $5,000 a year for medical officer, and up to $6,000 a year for senior medical officer. The salaries indicated are as stated without any other allowance. The position of senior medical officer is rarely or never certified, as promotions to a higher grade are made from physicians already on duty when suitably qualified personnel are available. Promotions to a higher grade or increase of pay within the grade or to the maximum of the grade, will be made only when the position occupied justifies the grade and work accomplished demonstrates ability. Appointments for part-time duty will be made at salaries to be determined by the services rendered.

For further particulars apply to the United States Civil Service Commission.

Trained Nurse

Trained Nurse (Psychiatric)

Applications for these positions must be on file at Washington, D. C., not later than December 31. The date of assembling of competitors will be stated on admission cards sent to applicants and will be about ten days after the date for the close of receipt of applications.

The examinations are to fill vacancies in the Panama Canal Service.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or custom house in any city.

Medical Officers

Applications for medical officer positions will be rated as received at Washington, D. C., until December 30. The examinations are to fill vacancies in the Indian Service, the Public Health Service, the Coast and Geodetic Survey, the Panama Canal Service, the Veterans' Bureau, and other branches.

The examinations are of five grades: Junior medical officer, assistant medical officer, associate medical officer, medical officer, and senior medical officer.

For the Departmental Service at Washington, the entrance salaries range from $1860 a year for the junior grade to $5200 a year for the senior grade. Juniors may be promoted to $2400 and seniors may be promoted to $6,000 after the six months' period of probation. Higher-salaried positions may be filled through promotion in accordance with the civil service rules. Promotion from grade to grade may also be made in accordance with the civil service rules as vacancies occur. For field branches the salaries are approximately the same except that deductions are made where quarters and subsistence are furnished and where part-time duty, only, is required.

Eligibles are needed who are qualified in general medicine and surgery. There is especial need for eligibles qualified in the various specialties. Practically any specialty may be named by the applicant.

Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or custom house in any city.

Junior Medical Officer (Interne)

Applications for junior medical officer (interne) must be on file at Washington, D. C., not later than December 30. The examination is to fill a vacancy in the United States Veterans' Bureau Hospital, Camp Custer, Mich., and vacancies in positions requiring similar qualifications.

The entrance salary is $1,860 to $2,400 a year without allowances, or $1,260 to $1,860 a year with quarters, subsistence and laundry, the entrance salary within the range stated depending upon the qualifications of the appointee as shown in the examination and the duty to which assigned. To those whose services are satisfactory, and in the discretion of the appointing officer, there may be granted a salary increase of not more than $600 a year at the end of the six months' probationary period required by the civil service rules, and at the end of 18 months the salary of $3,300 a year, without allowances, may be paid in the discretion of the appointing officer and subject to the existence of vacancies.

The duties, under immediate supervision, are to admit patients, take histories, make physical and mental examinations and record findings; to make ward rounds of inspection, note charts, record observations; to prescribe for minor ailments or for acute or emergency cases and to dispense medicine in emergency; to perform minor surgical operations and to assist at major operations and in redressing; to administer anesthetics; to make routine laboratory tests and analyses; to assist at out-patient clinics in dressing and in administering vaccines; to keep records, make up case histories, answer correspondence relating to patients and compile statistics requiring medical training.

Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or customhouse in any city.

REPORTS AND NOTICES OF MEETINGS

MEETING OF THE LAWRENCE MEDICAL VETERANS' CLUB

There was a meeting of the Lawrence Medical Veterans' Club at the Merrimac Valley Country Club of Methuen Thursday, November 18, 1926, at 8:15 p. m.

The following papers were presented:

Raw versus Pasteurized Milk, Henry F. Dearborn, M.D., of Lawrence.

Iodine Poisoning, Andrew F. Shea, M.D., of Lawrence.

Letters from a Member of the American Near East Commission read by Thos. W. Murphy, M.D., of Lawrence.

The Federal National Park System, by J. Forrest Burnham, M.D., of Lawrence.

MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY

THE annual meeting of the Massachusetts Medical Benevolent Society was held in Sprague Hall, Boston Medical Library, on the afternoon of Thursday, October 28, 1926. The Treasurer reported that during the past year the sum of $5400 was disbursed to 18 beneficiaries. For many years the Society has annually devoted its entire income to the charitable relief of unfortunate physicians, their widows or children, whom circumstances have made dependent on the pecuniary aid of others. This year many other deserving cases needed assistance, which, for lack of funds, the Society could not give. The Society needs more members. Every Fellow of the Massachusetts Medical Society should belong to it. It has always been a characteristic point of honor in our profession, as in no other, that its members and their families should freely receive professional service in sickness. It should be felt as equally an honorable duty among physicians to see to it that none of their professional brethren suffer, in old age or adversity, from destitution or physical hardships.

The following officers of the Massachusetts Medical Benevolent Society were elected for the ensuing year:

President: Dr. George W. Gay; Vice-President, Dr. Roger I. Lee; Treasurer, Dr. William L. Richardson; Trustees, Dr. John W. Bartol, Dr. Walter P. Bowers, Dr. James S. Stone.

Applications for membership should be sent to the Secretary, Dr. Robert M. Green, 496 Commonwealth Avenue, Boston.

THE ANNUAL MEETING OF THE TRUDEAU SOCIETY

THE Second Annual Meeting of the Trudeau Society of Boston was held at the Boston Medical Library on November 11, 1926.

Dr. John B. Hawes, 2nd, spoke as to the objects of the Society, and then introduced the speaker of the evening, Dr. Richard C. Cabot.

Dr. Cabot gave a most interesting talk on the subject of "Tuberculosis from the Standpoint of Clinic and Autopsy," and distributed three papers containing the following statistics: 1, Tuberculosis, Autopsied Cases, Massachusetts General Hospital; 2, Tuberculosis, Ward Cases; 3, Tuberculosis, Out-Patient Cases. Dr. Cabot also spoke on "Errors of Diagnosis in Tuberculosis" and read Case Histories.

The discussion was very stimulating, and was opened by Dr. Henry D. Chadwick. Others taking part in the discussion were Drs. Vincent Y. Bowditch, George W. Holmes, Walter A. Griffin, Randall Clifford, Charles S. Millett, John B. Hawes, 2nd, and Francis H. Williams.

The following officers were elected to serve for the coming year:

President, Dr. George S. Hill; Vice-President, Dr. Vincent Y. Bowditch; Secretary-Treasurer, Dr. Randall Clifford.

Council: Dr. Cleaveland Floyd, Dr. Ralph D. Leonard, Dr. Henry D. Chadwick, Dr. Gerardo Balboni.

RANDALL CLIFFORD, M.D., *Secretary.*

MEETING OF THE LYNN MEDICAL FRATERNITY

THE Lynn Medical Fraternity held its regular meeting and dinner at Deer Cove Inn, Swampscott, on Thursday, Nov. 18, 1926.

The society listened to addresses by Dr. George H. Bigelow, Commissioner of Public Health of the Commonwealth, and Dr. Robert B. Greenough, Director of Huntington Memorial Hospital, who discussed the subject of cancer with especial reference to the departments endeavors to establish cancer clinics in various parts of the state in compliance with the mandate of the Legislature.

The society voted a unanimous endorsement of the department in its efforts to control cancer and voted that a committee of five be appointed by the president of the Society to be known as the cancer committee of the Lynn Medical Fraternity, whose duty it shall be to consider the subject of cancer in Lynn and, if in its judgment it seems wise to establish a cancer clinic in Lynn, to take steps looking to this accomplishment, acting in coöperation with the state department of health.

WM. T. HOPKINS, *Reporter.*

PHYSIOLOGICAL CONFERENCE MEETS

DR. G. SCHALTENBRAND was the main speaker of the Physiological Conference held Friday afternoon, November 12, in the Bowditch Library of Harvard Medical School. Dr. Schaltenbrand is at present a Fellow of the Rockefeller Institute, and is engaged in research work under the direction of Dr. Harvey Cushing, Surgeon in Chief of the Peter Bent Brigham Hospital. He worked for some time under Professor Magnus, eminent Dutch Physiologist, of the University of Utrecht, and at his suggestion undertook an extensive experimentation upon the thalamus of animals.

Dr. Schaltenbrand's subject was: "Thalamus Cats." He opened his discussion by a historical presentation of the subject, reviewing the work which was undertaken at the University of Utrecht under Professor Magnus, and also that which has been done in other institutions, both abroad and in this country. He next explained in detail the physiological and anatomical bases, and the technique for the operation which has been designated in physiology and neurology as "A Thalamus Cat."

He also explained in detail the physiological manifestations resulting from the operation, and concluded his discussion by a generalized summary of the importance of the operation to experimental physiology and neurology, and its applications to clinical medicine and surgery.

MEETING OF THE HAMPSHIRE DISTRICT MEDICAL SOCIETY

The December Meeting of the Hampshire District Medical Society was held Wednesday, December First at 11:30 at Cooley Dickinson Hospital and was addressed by Dr. F. F. Tucker, Superintendent of the Williams-Porter Hospital in Tehchow Shantung, China, on the subject: "Planting Modern Medicine on Ancient Chinese Soil." This was intensely interesting.

Mabel Berry, R. N. desires to consult the Fellows on a very important subject for which a decision of the Society was asked.

Then for the lunch hour, every Fellow was invited to do his duty by repairing to Memorial Hall, where the ladies of the Cooley Dickinson Hospital Aid Association were holding a "Market Day." This was to raise money for a new maternity building.

W. B. Segur, *President.*
L. O. Whitman, *Secretary.*

MEETING OF THE WORCESTER DISTRICT MEDICAL SOCIETY

The semi-annual meeting of the Worcester District Medical Society was held in the Foyer of the Chamber of Commerce building on Wednesday evening, Nov. 20th. There was a short business meeting at six o'clock followed by a reception to the guests of the evening, Dr. John B. Deaver of Philadelphia, internationally known surgeon, Dr. James S. Stone of Boston, President of the Massachusetts Medical Society, and Hon. M. J. O'Hara, Mayor of Worcester.

At seven o'clock the meeting was adjourned to the mezzanine floor of the Hotel Bancroft where dinner was served to over a hundred and twenty-five members.

Following dinner, President Trowbridge introduced Mr. Roscoe Goddard, general secretary of the Worcester Chamber of Commerce. Mr. Goddard welcomed this Society to the use of the Chamber Foyer at all times. Mayor O'Hara expressed his appreciation of the privilege of attending the meeting of this Society and welcomed Dr. Deaver and Dr. Stone to Worcester. Dr. Stone told the Society the absolute need of whole-hearted support to the State Legislative Committee and to the new Workmen's Compensation Committee. Following Dr. Stone, Dr. Deaver was introduced by President Trowbridge. Dr. Deaver's subject was "Modern Conception of Upper Abdominal Disease." He discussed briefly diseases of the biliary system, the pancreas and the spleen and at some length the diseases of the gastric system. Gastric and duodinal ulcers were compared as to symptoms and treatment. Dr. Deaver's appreciation of x-ray interpretations of gastric disease was especially interesting to roentgenologists present. Dr. Deaver's paper consumed less than one hour and held those present attentive during the entire time. It is a rare privilege and treat to hear a man like Dr. Deaver talk and we hope that we all shall meet him again. We greatly appreciate his willingness to come here from Philadelphia to talk to us.

Dr. Trowbridge adjourned the meeting at ten o'clock p. m.

Earle E. Fipphen.

ANNUAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

The sixteenth Clinical Congress of the American College of Surgeons was held in Montreal from Monday morning, October 25, to Friday evening when the closing session took place. The meeting was a conspicuous success, several circumstances combining to bring this about. In the first place it was excellently organized, as is the case always by Dr. H. Franklin Martin, the Director General of the College and his able associates. In the second place Montreal itself is admirably adapted for such a meeting. Its railway facilities are good, its hospitals are numerous and of a high standard, its surgeons are keen and able, clinical material is abundant, and its hotel accommodation is beyond reproach. Lastly, the meeting was well attended, the papers read and addresses given were of the kind which attracted attention, and the clinical demonstrations, the raison d'être of these gatherings, were interesting and instructive.

The meeting opened in the Windsor Hall of the Windsor Hotel, the headquarters of the Congress, at 9.30 on the morning of October 25. One of the most important tasks which those in control of the policy of the College have taken upon themselves is that of raising the standard of the hospitals throughout this continent to a high state of efficiency. There has been established a minimum standard of efficiency which it is the object of the College to raise higher steadily and continually. As speakers at the meeting set forth, while much harm can result from reducing essential things to a uniform standard, nothing but good for science can result from establishing standards to which organizations and institutions must be raised.

Dr. Rudolph Matas of New Orleans, the retiring president of the College, presided at the opening meeting, a conference on hospital standardization, and Dr. A. K. Haywood, superintendent of the Montreal General Hospital, gave the first address. He spoke in detail of the organization and work of the Montreal hospitals, deploring the fact that owing to the rapid growth of Montreal, the hospitals of the city had been unable to keep pace with its growing needs. General Sir Arthur Currie, Principal of McGill University, laid stress on the fact that public health was the foundation of the happiness and prosperity of a country and that it would be well for all concerned if statesmen real and imaginary grasped this truth and acted upon it. Among other speakers was Professor D. P. Wilkie of Edinburgh, who pointed out the parlous situation in which many of the hospitals of Britain found themselves. He drew attention especially to the plight of the workman earning good wages who scorned to go for treatment to the hospitals intended for the poor and who could not afford to enter the costly institutions for treating the rich. What are termed the lower middle class in Britain including the better paid workmen and a numerous class with a limited income constitute a considerable proportion of the British population in this situation, and Professor Wilkie advocated for their benefit the establishment in Britain of a somewhat similar system to that inaugurated by the American College of Surgeons.

On the evening of Monday, October 25, Dr. Walter W. Chipman of Montreal, was invested with the office of president of the American College of Surgeons. There were present on the platform about 30 eminent surgeons including ten distinguished guests who were presented to the audience by Dr. Franklin Martin, these were Professor David P. Wilkie, Edinburgh, Scotland; Professor Roberto Allessandri, Rome, Italy; Sir Ewen Maclean, Cardiff, Wales; Professor Archibald Young, Glasgow, Scotland; Professor John M. C. Fraser, Edinburgh, Scotland; Mr. W. Sampson-Handley, London, England; Professor Louis E. Barnett, Dunedin, New Zealand; Professor Ricardo Palma, Lima, Peru, representing the oldest university of these continents; Professor Rudecende de la Fuente, Valparaiso, Chili; and Professor Linz de Rezende Puech, San Paolo, Brazil. After Dr. Alfred T. Bazin, Chairman of the Committee of Management, had welcomed the guests to the city and Sir Arthur Currie had extended a welcome on behalf of McGill University, Dr. Rudolph Matas of New Orleans, as retiring president made a speech, expressing the sense of honor with which the College welcomed the presence of many distinguished surgeons from all corners of the globe, he singled out for special mention the Regius Professors of the Universities of Edinburgh and Glasgow. He pointed out that it was peculiarly appropriate that they should be in Montreal at a Congress of American Surgeons held in the great Commonwealth of Canada, in a city and a province dotted all over with monuments to commerce, industry and education by the enterprise, energy and genius of Scotland's sons and their Canadian descendants, where Scottish medicine and surgery had been transplanted and flourished with wonderful fertility, and where the heather and thistle seemed to grow apace with the maple and fleur-de-lis.

Dr. Chipman after being invested with the robes and insignia of office gave a brilliant address on cancer prophylaxis. Lack of space precludes a lengthy review of his address and it must suffice to make running commentaries on the chief features of his address. Dr. Chipman submitted the following working hypothesis of the cause or causes of cancer. In general terms it might be stated that the maximum of cell proliferation was attained early in intra-uterine life; that this cell adjustment in what Oertel terms growth, was more or less uniform during maturity, and gradually diminished with the onset of senescence. It followed that there must always be an ever-changing, a renewed demand for cell adjustment in what Oertel calls our "morphological fluidity." No tissue and no organ was ever at rest, cell proliferation and cell regression were constantly at work and their reciprocal relations were never fixed or quiescent. With the onset of senescence and age, be it remembered not a matter of years but of tissues, a man of forty might be actually older than one of sixty, the demand for cell production was decreased. This decrease should be even and mutual between the tissues. Now, if by any chance the cell production should outlast the cell demand in any tissue, there would at once result an over production of certain cells and a loss of tissue balance. These excess cells finding no work remained in consequence, vegetative and embryonic, the de-differentiated cells of a tissue anaplasia. It was these cells, these "idle hands" as it were, that constituted the menace. For while they retained the fundamental attributes of nutrition and propagation, no demand of higher function was made upon them, and so they came to form a lawless rabble within the tissue. The ideal and healthy old age was one in which there was a commensurate, a reciprocal, loss of cell production among the tissues: where there was no excess cells, and a normal tissue balance was maintained. Under such conditions old age was a timely, a slow, a mutual decline of the several tissues. The practical question asked by Dr. Chipman was:—are there any means by which we can modify premature senescence and prevent chronic irritation, the two factors concerned with the production of cancer, and here came in the main theme of the address Cancer prophylaxis. With many other investigators of the cancer problem, Dr. Hindhede of Copenhagen, and Sir Arbuthnot Lane of London for example, Dr. Chipman holds that over-eating and a self indulgent luxurious life tends to the production of premature senescence on what may be termed the precancerous stage. "It is the over-eating or overdrinking, the overloaded nutrition which brings inevitably a premature old age, a general lowering of resistance and a disturbance of balance between the tissues." The speaker omitted purposely the question of heredity, because there was no agreement on the point but mainly because it did not enter, to any extent, seemingly into the question of prophylaxis. Reference was made, however, to the result of exhaustive research by Dr. Maud Syle of the Sprague Institute in Chicago, which as the outcome of experiments on mice appeared to present biologic evidence of the inheritability of cancer in man. Dr. Chipman dealt with cancer prophylaxis in detail, general and special, moreover pointing out that the several systems of the body required, each, individual prophylaxis. The genital tract of the female demanded special mention; for here cancer killed frequently. It was a cruel death and so much could be done in the way of prophylaxis. Lastly, the speaker discussed the problem of the education of the laity. There was danger here unless this education was temperate and well advised. The general public must be shown the way to its salvation, by special meetings perhaps, and by inspired articles in the daily press. But there was great need for caution and restraint. Sensational appeals merely served to start a panic, to create a cancer-phobia, to exhibit a remedy almost as bad as the disease.

The last address of the evening was the John B. Murphy Oration in Surgery, delivered by Professor Archibald Young of Glasgow, his subject being "Sir William Macewen and the Glasgow School of Surgery." It may be said that no one better fitted to speak of Macewen and the Glasgow School of Surgery could have been found than Professor Young. For twenty years or so, he was assistant to Macewen when Regius Professor, and after his death was himself made Regius Professor. He was educated in the Glasgow School of Medicine, knows its history thoroughly and is steeped in its traditions. Professor Young began by eulogizing the work of Murphy, tracing some analogy between the great Chicago and Glasgow surgeons, and then gave an historical resumé of the Glasgow School of Surgery. In 1598 Maister Peter Lowe returned from France to his native Glasgow and without delay obtained a charter for the Faculty of Physicians and Surgeons of Glasgow. The Regius Chair of Glasgow University was instituted in 1815, and the speaker gave biographical sketches of the five professors who had preceded himself in the Chair. Joseph Lister, who by the way was not a Scotsman, but born not far from London, was appointed to the Chair in 1860 and held it until 1869. The fifth Regius Professor was Sir William Macewen, who was appointed in 1892 and was still its occupant at the time of his death. Professor Young described Macewen as a man of quite extraordinary energy and persistence in going through with whatever line of investigation he undertook. He also possessed the philosophical doubting kind of mind and was never satisfied until he had proved to himself that he was right. He took nothing for granted. In 1893 he published his classic work on pyogenic diseases of the brain and spinal cord. He was the pioneer in brain surgery although some claim this honor for Sir Victor Horsley. However, as Young said, both Macewen and Horsley based their brain operations upon the findings of Hughlings Jackson and others who worked with that great man. Macewen was an earnest disciple of Lister, and was one of the first to use antiseptics. He also was one of the first to practice aseptic measures and adhered to them to the end. Macewen was a great surgeon and original thinker and it was a happy thought of Professor Young to make Macewen of international fame, the subject of the oration on Murphy who also was known throughout the world.

The evening meeting of October 26 was wholly concerned with cancer. The first address was by Professor Roberto Alessandri of Rome, Italy, the personal medical attendant of Mussolini and one of the first Italian surgeons. His subject was "Thyroid and Parathyroid Bone Tumors Without Primary Lesion of the Thyroid Gland." The speaker said in part that it was a very well known fact that tumors of thyroid origin had a striking predilection to metastasis in the bones, more than that, as for frequency it could be said that metastasis of malignant thyroid growths of the skeleton together with those of the breast, and other glands had precedence over other forms, which seldom gave place to bone growths. It was also to be noted that cases had been reported of secondary growths in bones where the lesion was not to be considered either clinically or anatomically as real thyroid neoplasm, but where all the characteristics led to simple colloid or hyperplastic goiter.

Dr. Alessandri went on to point out that so many authors had denied the existence of metastasis of benign tumors and had held that the presence of metastasis was a sure proof of malignancy. While allowing that most cases were of this type the speaker thought that the problem was not wholly solved in this respect and that there were indeed cases in which no change in the thyroid was to be found. In these, the exclusive explanation of a reference to a malignant primary tumor of the thyroid gland could not be accepted, if a tumor in accessory thyroids were also excluded. By pictures on the screen Professor Alessandri explained the details of two cases of bone tumor operated upon by himself in which there had been no alteration in the thyroid in either case. He concluded that there could be but little doubt that the tumors were skeletal, thyroid ones, with a progressive course, local recurrence and multiple metastasis. In these two cases, he added, and this was the reason he thought them so important was that the thyroid neither before the skeletal growth, during its development nor after operation showed even the slightest change or enlargement. Neither in the regions of the neck nor of the tongue nor where aberrant thyroid glands could be found was there anything suspicious which could represent the primary site of an eventual tumor, whence the metastasis proceeded. He did not think it possible to suppose the presence of a primary neoplasm, which even if small ought to be present prior to the bone localization, and which ought to have revealed itself before the lapse of time mentioned in the reports. The speaker, therefore, deduced that it must be admitted that bone tumors of thyroid or parathyroid type could be found without any primary lesion of the normal thyroid gland or of an accessory one.

Dr. William Mayo of Rochester, Minn., then presented his views of the cancer problem, or rather his address was an impartial well thought out and excellently worded presentation of the existing situation as regards cancer. He stated as a premise to his major conclusions that the cell was the unit of life; cancer was a disease of the cell, and whether the cause lay within or without the cell membrane, the change in the cell was biologic in origin. He pointed out that the work of many investigators had so far failed to demonstrate conclusively that a foreign organism was the cause of cancer. That the substance which acted upon the cell to produce malignancy became an inseparable constituent of the cell was shown by the discrimination of cancer, which was accomplished only by the transplantation of the malignant cell itself. The most interesting part of Dr. Mayo's address was that which referred to chronic irritation or the manner in which it wrought its evil effects in the body, and the question of immunity. With regard to chronic irritation he asked the question "Does chronic irritation result in a wearing out of the productive tissues of the body, which, failing to reproduce sound cells, attempt to use embryonic cells as replacements and eventually lose power over them? Does chronic irritation prematurely age tissues by overwork and produce a condition closely resembling the senile conditions, which so often lead to cancer in the aged? Or do defects in the covering tissues of the body permit the entrance of some noxious agent into the human body which incites the malignant disease?" In answer the speaker said "We do not know, but we may well believe that at least, indirectly chronic irritation is the known factor of the greatest importance in the causation of cancer." But as Adami insisted in the last address he ever gave, the discovery of the cause of cancer sinks into insignificance when contrasted with effective prevention, that is to say unless the discovery of the cause leads to the devising of successful treatment. It may be noted that the discovery of the cause of a disease by no means always leads to successful treatment, for example tuberculosis.

In his address Dr. Mayo recognized the force of this argument and remarked that it was interesting to speculate whether the degree of malignancy was wholly dependent on the causative agent which lay behind the cancerous process, or whether it was in part controlled by powers of immunity exercised through the chemical reaction of the patient's antibodies. He proceeded to say that it must be believed that under normal conditions of life the tissues of the average human body possessed more or less immunity to malignant disease. It seemed quite probable that 80 per cent of persons in ordinary circumstances would not develop cancer. Estimating that 10 per cent of the deaths of persons in middle age and later life were due to cancer, why had not the other 90 per cent of the population at similar age periods developed cancer? Was freedom from cancer due to accident, or did those who escaped the disease possess superior immunity to its cause or causes? Science had been able to develop soil changers in smallpox, diphtheria and tetanus, why not in cancer? Because of natural immunity to the disease, relatively only a small portion of the total population were susceptible to scarlet fever. With Dick's serum the degree of natural immunity of the individual to scarlet fever could be determined and if it was not sufficient to protect from the disease, it could be increased to normal by serum. Why not in cancer? The development of carcinoma as well as its degree of malignancy might be attributed to the diminished activity of immunizing processes rather than to the nature of the activating agent. Dr. Mayo seems to lean to the belief that the true conquest of cancer lies in prevention.

Mr. W. Sampson Handley of London, England, spoke of the method of operating for breast cancer followed by him at the Middlesex Hospital, London. This method is the combined use of knife and radium tubes. For this mode of operation he claimed a large percentage of successful results in cases submitted for early treatment. In support of his statements he quoted extensively from his own experiences and operations at the Middlesex Hospital. By the aid of lantern slides Sampson Handley explained the technic of his procedure. He stated that he used four 25 milligram radium tubes screened by one millimetre of platinum in the intercostal spaces, leaving them in position for 24 hours, except in certain unusual cases in which a 12 hour period had to be resorted to. He also threw on the screen a drawing of his operation for the excision of intercostal growths. He stated that this operation greatly lengthened the period under anesthesia, and the time of the ordinary breast operation. The placing of the radium tubes occupied only an additional five minutes, but the situation of the tubes was of the first importance. He showed on the screen the positions of the tubes. Recurrence of the malignancy in the locations protected by radium tube insertion were practically nil.

Dr. Lewis L. McArthur, Chicago, warned physicians and dentists to lose no time in obtaining competent investigation of tongue sores, which in a number of cases might be found to house cancer, and made a strong appeal to the public in general to take to heart the pleas being made for early diagnosis in all cases. He cited 76 cases in his own experience in which tongue cancers had been overlooked. Dr. McArthur insisted upon the benefits of early treatment, urging that within the first 30 days, at any rate, the infection seemed to be localized. He quoted from his own experience a number of cases in which he had effected a cure by primary operation. Operations, however, on neighboring or possibly involved parts of the mouth were relegated to the realms of "wait and see." He also dealt at some length with the necessity for discriminating between cancer, syphilis and tuberculosis in tongue cases.

Dr. John G. MacKenty of New York, stressed the importance of early diagnosis and surgery in the treatment of cancer of the larynx, stating that with such diagnosis and treatment the disease was curable. He showed several lantern slides of various throat growths pointing out the differences between cancer cases and of other conditions which might be readily mistaken for cancer and explained how an accurate diagnosis might be made. When the public had been educated to recognize chronic hoarseness as a danger signal progress would have been made, he said, emphasizing the importance of such recognition by the medical profession and its careful division into various possibilities of cause. He held that radium failed in throat cancer treatment in 96 per cent of cases, and said that in his opinion it was time that more of the truth about radium was told.

Dr. Vilray P. Blair of St. Louis, spoke on cancer of the jaws and its treatment by radium, diathermy and cautery. He urged his hearers to have the courage to take the necessary measures to their fullest extent in cases of cancer of the jaw. "Forget the jaw and remember the cancer" he advocated as a motto of treatment except where fall of the floor of the mouth might be involved through the necessary surgery in which case he recommended adequate counter precautions.

Dr. Robert B. Greenough of Boston, gave a summary Report of the Committee on the Treatment of Malignant Diseases with Radium and the X-ray. The report was a favorable one, the speaker stating that perhaps contrary to expectation, treatment by such means showed up as well as in the former report, evidence it would seem that this form of treatment was standing the test of time. A large part of the report was given over to statistics. The report was fair and impartial and as said before, on the whole, was favorable to the employment of radium and X-ray in certain cases of malignancy which seemed to lend themselves to this kind of treatment.

In the course of a discussion which followed the papers Dr. A. T. Bazin of Montreal said it was apparent that those surgeons and medical men who treated diseases of the mouth should heed the propaganda of education spread by organizations such as the American College of Surgeons.

Dr. Austin of Kingston, Ont., laid stress on the need for some means for determining whether or not cancer was present in the individual before the growth had become practically inoperable as in cancer of the intestines, for example. The solution of this difficulty he thought rested in the hands of the bio-chemist, who might devise some test whereby it might be determined positively whether any particular individual had cancer, although malignant growth could not be detected.

On the evening of October 27, skin grafting and plastic surgery were the subjects discussed. Each paper dealt mainly with details of lesions and sutures, made clearer by pictures on the screen.

Dr. Gordon B. New, Rochester, Minn., in his summary pointed out that the cosmetic as well as the functional results must be considered. Papers were read during the evening by Dr. Sumner L. Koch and Dr. Allen B. Kanavel of

Chicago; Dr. Arthur Stendler of Iowa, Dr. H. M. Lyle of New York and Dr. Sterling Bunnell of San Francisco. During the evening Dr. Ewarts A. Graham of St. Louis described his now well-known method of detecting lesions of the gall bladder rendering gall stones more plainly visible than by any other method, and thereby rendering operations more sure and more safe. It was stated that operations on the gall bladder consequent upon the use of this method had been successful in 98 per cent of the cases.

On the evening of October 28, Dr. John M. C. Fraser of Edinburgh gave an address on the involuntary nervous system in relation to abdominal disease, and Professor L. E. Barnett of Dunedin, New Zealand, spoke on the recent advances in our knowledge of hydatid disease. These addresses were followed by a symposium on sterility in men and women. Dr. Edward L. Keyes of New York, dealt with sterility in men, Dr. Robert T. Frank of New York, on endocrine causes of sterility in women including their diagnosis, prognosis and treatment, and Dr. John Osborn Polak of Brooklyn, on clinical studies in sterility in women. Drs. Frank S. Patch and H. M. Little of Montreal, also took part in the discussion.

In a discussion which took place at a meeting of the American College of Surgeons Hospital Standardization Conference under the chairmanship of Professor Herbert S. Birkett of McGill University, the question of having a well-planned, well-installed, well-organized department for the treatment of eye, ear, nose and throat in every general hospital, and the best means of achieving this end was debated by leading authorities on this branch of medicine. Amongst those who took part in the discussion was Dr. M. T. MacEachern, Associate Director of the College of Surgeons, Dr. Joseph C. Beck of Chicago, and Dr. Edward Jackson of Denver, who held that the idea of the special department should be that of a hospital within a hospital; having its own staff of interns and its own nurses trained to do its special work.

The last evening meeting was devoted to the bestowal of 470 Fellowships to practitioners from eight different lands, and to the Presidential and Fellowship addresses. It was an impressive scene. Honorary Fellowships were conferred on Professor R. Alessandri of Rome, Italy; Dr. Archibald Young of Glasgow, Scotland; Mr. W. Sampson-Handley of London, England; Sir Ewen Maclean, Cardiff, Wales; Professor L. G. Barnett, Dunedin, New Zealand; Professor John Fraser, Edinburgh, Scotland; and Professor Wilkie of Edinburgh, Scotland.

Following the ceremony of granting Fellowships, Sir Ewen Maclean gave the Fellowship address "Some Observations on the Object of the College," and after that Dr. W. W. Chipman gave the presidential address "Lord Lister." The reception of the Fellows and guests by the Director General and Regents of the College brought the functions to a close.

Little can be said here of the wealth of clinical demonstrations at the numerous Montreal hospitals, French and English speaking, which vied with each other in their efforts to provide for their visitors surgical problems of special interest. There is no doubt that the visitors appreciated the efforts of their hosts and benefited by their introduction to the hospitals of Montreal. Clinical demonstrations were also held in the Windsor Hotel. At the fracture symposium held there on the afternoon of October 29, amongst others who took part were Dr. Nathaniel Allison of Boston, who dealt with the keeping of records and the securing of results in fracture cases; Dr. Joseph Blake of New York, discussed the principles of fracture treatment; Dr. Robert B. Osgood of Boston, compression fracture of the spine; Dr. Frederick J. Cotton of Boston, reduction and artificial inpaction of fracture of the neck of the femur; Dr. C. B. Keenan, Montreal, recognition of dislocation of the os calcis in fracture of this bone, and Dr. F. J. Tees, practical demonstration of application of Thomas splint.

Dr. George David Stewart of New York, has been chosen president-elect of the American College of Surgeons for the ensuing year. Dr. Stewart was born in Nova Scotia. In 1889 he was graduated from Bellevue Hospital Medical College, New York. At the present time he is professor of surgery at that college. Dr. Truman W. Brophy of Chicago, and Dr. Frank W. Mewburn of Edmonton were elected vice-presidents for the ensuing year.

In this account of the Congress only some of the more outstanding features have been dealt with. As may be observed most space has been devoted to the papers on cancer all of which were of the greatest interest.

MEETING OF THE NEW ENGLAND HEART ASSOCIATION

On Thursday evening, Dec. 16, at 8.15, at the Peter Bent Brigham Hospital, there will be a meeting of the New England Heart Association. Dr. William H. Robey will read a paper on "The Effect of Tonsillectomy on Acute Rheumatic Fever and Rheumatic Heart Disease."

The discussion will be opened by Dr. Louis M. Freedman.

Dr. Albert D. Kaiser will talk upon "The Relation of Tonsillectomy of Rheumatic Fever and Heart Disease in Children."

All are cordially invited to attend.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

THE next meeting of the Society for Experimental Biology and Medicine will be held Wednesday afternoon, December 15, 1926, at 4:30 P. M., in the Nash Lecture Room, University Museum, Cambridge.

The program will consist of several papers by members of the Society.

1. By Dr. W. J. Crozier of the Zoological Laboratory of Harvard University. Paper entitled "Temperature Characteristics for the Embryonic Heart."
2. By Dr. W. H. Cole of Clark University, Worcester, Mass. His paper is entitled "Notes on the Pyridine Test for Chloroform Applied to Extracts of the Brain."
3. Dr. Willard O. Thompson of the Massachusetts General Hospital "The Relation Between Plasma Volume and Plasma Chemistry Changes in Myxedema."
4. Dr. A. E. Mavez of the Zoological Department of Harvard University "Galvanotropism of Roots."

PHI LAMBDA CAPPA MEDICAL FRATERNITY

BOSTON Medical Library, John Ware Hall, Tuesday, December 14, 1926, 8:15 P. M.

Dr. Paul D. White will speak on the "Accuracy of the Clinical Diagnosis of Heart Disease." Discussion will be opened by Drs. Edward N. Libby, Burton E. Hamilton and Samuel A. Levine.

H. J. RUBENSTEIN, *Chairman.*

INVITATION TO JEWISH STUDENTS

A MEETING designed to interest Jewish students will be held in John Ware Hall at the Boston Medical Library on Thursday, December 9, 1926, at 8:15 P. M. Doors will be closed at 8:10.

PROGRAM

Musical selections by distinguished soloists will be rendered.

Speakers: Dr. Daniel L. Marsh, President of Boston University; Rabbi L. M. Epstein, Dr. Hyman Morrison, Mr. Isaac Harris, Prof. Nathan Isaacs, Mr. Joseph Shubow, President of Azukah.

Admission by invitation only.

H. J. RUBENSTEIN.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

Wednesday, January 5, 1927—Semi-annual meeting. Centre Church vestries, Main Street, Haverhill.

Wednesday, May 4, 1927—Annual meeting. Russell Hall. Young Men's Christian Association Building, 40 Lawrence Street, Lawrence.

Thursday, May 5, 1927—Censors meet for examination of candidates at Hotel Bartlett, 95 Main Street, Haverhill, at 2 P. M.

Essex South District Medical Society

Wednesday, January 5, 1927—Deer Cove Inn, Swampscott. Dr. James S. Stone, "Differential Diagnosis of Acute Abdominal Conditions in Children." Discussion by Drs. O'Keefe of Lynn, Nichols of Danvers and Walter Phippen of Salem, five minutes each.

Wednesday, February 2, 1927—Hawthorne Hotel, Salem. Dr. H. H. Clute of the Lahey Clinic, "Differential Diagnosis and Treatment of Thyroid Disease." Discussion by Drs. Johnson of Beverly and Field of Salem, ten minutes each.

Wednesday, March 2, 1927—Lynn Hospital. Clinic, 5 P. M.; supper, 7 P. M. Dr. George Minot, "Pernicious Anemia, with Special Reference to Liver Diet." Discussion by Drs. Sargent of Salem and Reynolds of Danvers, ten minutes each.

Wednesday, April 6, 1927—Danvers State Hospital. Clinic, 5 P. M. Dr. Allan W. Rowe, Chief of Research Service at Evans Memorial, "The Differential Diagnosis of Endocrine Disorders." Followed by dinner. Discussion by Drs. Wood of Hathorne and Kline of Beverly, ten minutes each.

Thursday, May 5, 1927—Censors meet for examination of candidates at the Salem Hospital, 3:30 P. M.

Wednesday, May 11, 1927—Annual meeting. The Tavern, Gloucester. Speaker and subject to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District for the remainder of the year. Minor changes may be made in case of necessity.

January 25, 1927—Peter Bent Brigham Hospital. Dr. Harvey Cushing. Time of meeting and subject to be announced.

March 1, 1927—Roxbury Masonic Temple, 8:15 P. M. Dr. Robert B. Greenough. To be devoted to a talk on cancer, with a résumé of the results of colloidal lead treatment.

March 29, 1927—Roxbury Masonic Temple, 8:15 P. M. Drs. F. S. Newell and F. J. Irving, "The Modern Treatment of the Eclampsias and Toxaemias of Pregnancy." If time permits—"The Modern Methods of Handling Prospective Caesarean Cases."

May 10, 1927—Annual meeting. Details of meeting to be announced.

Suffolk District Medical Society

Meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library, 8 The Fenway, Boston, at 8:15 P. M., as follows:

January 26, 1927—General meeting in association with the Boston Medical Library. "Medical Work at the Metropolitan Life Insurance Company," Dr. Augustus I. Knight, Medical Director, Metropolitan Life Insurance Company.

February 23, 1927—Surgical Section. "Clinic on Neurological Cases at the Peter Bent Brigham Hospital," Dr. Harvey Cushing.

March 30, 1927—Medical Section. Subject and speaker to be announced later.

April 27, 1927—Annual meeting. Election of officers. "Medical Education in the Orient and Occident," Dr. David L. Edsall, Dean, Harvard Medical School.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

BOOK REVIEWS

BOOKS RECEIVED FOR REVIEW

Orthopaedic Surgery. By W. A. Cochrane. New York: William Wood & Co. 528 pages. Price, $6.50.

Practical Materia Medica and Prescription Writing. By Oscar W. Bethea. Philadelphia: F. A. Davis Company. 498 pages. Price, $4.50.

The Duodenal Tube and Its Possibilities. By Max Einhorn. Philadelphia: F. A. Davis Company. 206 pages. Price, $3.

The Treatment of Fractures. By Charles L. Scudder. Philadelphia and London: W. B. Saunders Company. 1240 pages. Price, $12.

Stammering and Its Treatment. By Samuel D. Robbins. Boston: Boston Stammerers' Institute. 121 pages.

The Social Worker in a Hospital Ward. By Elsie Wulkop. Boston: Houghton Mifflin Company. 347 pages. Price, $3.

Manual of Proctology. By T. Chittenden Hill. Philadelphia and New York: Lea & Febiger. 294 pages. Price, $3.50.

Defective Memory, Absentmindedness and Their Treatment. By Arnold Lorand. Philadelphia: F. A. Davis Company. 340 pages. Price, $3.

Practical Dietetics in Health and Disease. By Sanford Blum. Philadelphia: F. A. Davis Company. 362 pages. Price, $4.

A Guide for Diabetics. By Walter R. Campbell and Mame T. Porter. Baltimore: Williams & Wilkins Company. 259 pages. Price, $2.50.

Essays in the History of Medicine. By Karl Sudhoff. New York: Medical Life Press. 397 pages. Price, $5.

Surgical Treatment of Goiter. By Willard Bartlett. St. Louis: C. V. Mosby Company. 365 pages. Price, $8.50.

A Practice of Physiotherapy. By C. M. Sampson. St. Louis: C. V. Mosby Company. 620 pages. Price, $10.

Stedman's Medical Dictionary. Ninth Edition. By Thomas L. Stedman. New York: William Wood & Co. 1178 pages. Price, $7.50.

The Inflammatory and Toxic Diseases of Bone. By Lowford Knaggs. New York: William Wood & Co. 416 pages. Price, $5.50.

Principles of Medical Treatment. By George C. Shattuck. Cambridge: Harvard University Press. 256 pages. Price, $3.50.

Mental Hygiene with Special Reference to the Migration of People. By Walter L. Treadway. Washington: Government Printing Office. 190 pages. Price, 25 cents.

A Study of the Top Minnow in Its Relation to Mosquito Control. By Samuel F. Hildebrand. Washington: Government Printing Office. 136 pages. Price, 30 cents.

A Course of Cancer Mortality in the Ten Original Registration States for the Twenty-one-Year Period 1900-1920. By W. J. Schereschewsky. Washington: Government Printing Office. 118 pages. Price, 20 cents.

Transactions of the Fifth Annual Conference of State Sanitary Engineers. Washington: Government Printing Office. 160 pages. Price, 20 cents.

Studies from the Rockefeller Institute for Medical Research. Vol. LVII. Baltimore: Williams & Wilkins Company. 597 pages.

Plastic Surgery of the Head, Face and Neck. By H. Lyons Hunt. Philadelphia and New York: Lea & Febiger. 404 pages. Price, $7.

The Human Body. By Marie C. Stopes. New York: G. P. Putnam's Sons. 268 pages. Price, $2.50.

The Lymphocyte in Resistance to Tissue Grafting, Malignant Disease and Tuberculosis Infection—An Experimental Study. By James B. Murphy. Baltimore: Waverly Press. 168 pages.

International Clinics. Vol. III, Thirty-sixth Series, 1926. Philadelphia and London: J. B. Lippincott Company. 310 pages. Price, $5.

Aviation Medicine. By Louis Hopewell Bauer. Baltimore: Williams & Wilkins Company. 241 pages. Price, $7.50.

Our Doctors: A Novel of Today. By Maurice Duplay. New York & London: Harper Bros. 279 pages. Price, $2.

The Psychoses of the Period of Involution. By James V. May, M.D., Superintendent, Boston State Hospital, Boston, Mass. Bulletin of the Massachusetts Department of Mental Diseases, Volume X, Nos. 1 and 2, April 1926.

Dr. May, who is Superintendent of the Boston State Hospital and a man of very great experience in dealing with mental disease, has carefully reviewed the literature and given the results of his personal experience with cases of mental disease appearing during the involutional period. The paper covers sixty-six closely typed pages and is a very careful review of the whole subject, with long and detailed case histories of ninety-three cases observed by him personally.

The topic is a most important one as cases of mental disease developing in the fourth and fifth decades of life are apparently increasing in numbers and deserve our close attention in order to ascertain the causes of this group of psychoses. Dr. May finds that in his ninety-three cases there were a considerable number of paranoid conditions and an equally large number of schizophrenic conditions. He thinks that involutional mencholia also as a clinical entity would be justified and is clearly separable from the manic-depressive group by the exhibition of a symptom complex which presents itself only during the involutional period. Single attacks of excitement, appearing for the first time during the involutional period, are rare. His final conclusions are as follows:

1. "We would appear to be justified in the formulation of the hypothesis that there is a well-defined clinical group of *Involution Psychoses* including all of the types already enumerated and almost certainly others, to be determined by further investigations.

2. "This group may be defined as including the following:—

1. Manic Types
2. Involution Melancholia
3. Other forms of Depression
4. Paranoid Types
5. Schizophrenic Types
6. Presenile Types (Alzheimer's Disease)
7. Other types (to be specified)."

This paper is a good example of the type of work done in our Massachusetts state hospitals and should receive a wide circulation. It is hoped that the useful bulletins of the Massachusetts Department of Mental Diseases will be continued in even larger and more permanent form.

Laboratory Outlines in Bacteriology and Immunology. John F. Norton, Ph.D., and I. S. Falk, Ph.D. University of Chicago Press. pp. 114.

This useful but unpretentious book is designed as a guide to laboratory work in the fundamental aspects of bacteriology and immunology. Valuable to both instructor and student, it is hardly adapted for independent laboratory workers and technicians, being more concerned with experiments serving to illustrate important points than with extensive or detailed descriptions of laboratory procedures.